

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1

4

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 02/08/2022	2. CONTRACT NO. (If any) 68HERC21D0006	6. SHIP TO: a. NAME OF CONSIGNEE Standards & Risk Management Div.	
3. ORDER NO. 68HERC22F0099	4. REQUISITION/REFERENCE NO. PR-OW-22-00134		
5. ISSUING OFFICE (Address correspondence to) CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001		b. STREET ADDRESS USEPA Headquarters William Jefferson Clinton Building 1200 Pennsylvania Avenue, N. W. Mail Code: 4607M	
		c. CITY Washington	d. STATE DC
		e. ZIP CODE 20460	
7. TO: JOEL DEMASI		f. SHIP VIA	
a. NAME OF CONTRACTOR Cadmus Group LLC, The		8. TYPE OF ORDER	
b. COMPANY NAME		<input type="checkbox"/> a. PURCHASE REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
c. STREET ADDRESS 100 5TH AVENUE SUITE 100		<input checked="" type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
d. CITY WALTHAM	e. STATE MA	f. ZIP CODE 024518727	
9. ACCOUNTING AND APPROPRIATION DATA See Schedule		10. REQUISITIONING OFFICE Standards & Risk Management Div.	

11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB				12. F.O.B. POINT	
13. PLACE OF a. INSPECTION Destination		b. ACCEPTANCE Destination		14. GOVERNMENT B/L NO.	
				15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) Multiple	
				16. DISCOUNT TERMS	

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	DUNS Number: 101163731 ALT TOCORS: Lameka Smith and Kesha Forrest TOCOR: Iliriana Mushkolaj Max Expire Date: 02/28/2025 Invoice Approver: Iliriana Mushkolaj Alt Invoice App: Lameka Smith Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME RTP Finance Center		\$221,708.00				17(i) GRAND TOTAL
	b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts		\$192,209.00				
c. CITY Durham		d. STATE NC	e. ZIP CODE 27711				

22. UNITED STATES OF

AMERICA BY (Signature)

02/08/2022

23. NAME (Typed)

Keith Pfeffer

TITLE: CONTRACTING/ORDERING OFFICER

ORDER FOR SUPPLIES OR SERVICES

PAGE NO

SCHEDULE - CONTINUATION

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IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER		CONTRACT NO.			ORDER NO.	
02/08/2022		68HERC21D0006			68HERC22F0099	
ITEM NO.	SUPPLIES/SERVICES	QUANTITY ORDERED	UNIT	UNIT PRICE	AMOUNT	QUANTITY ACCEPTED
(a)	(b)	(c)	(d)	(e)	(f)	(g)
0001	Admin Office: CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001 Period of Performance: 03/01/2022 to 02/28/2025 BASE YEAR T&M Tasks for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. Time-and-Materials for PWS Tasks 1, 4, 5, 6, 7, & 8 with a ceiling value of \$168,009.00. Product/Service Code: R499 Delivery: 02/28/2023 Accounting Info: 22-23-B-40DA-000B53-2505-2240SRE002-00 1 BFY: 22 EFY: 23 Fund: B Budget Org: 40DA Program (PRC): 000B53 Budget (BOC): 2505 DCN - Line ID: 2240SRE002-001 Funding Flag: Complete Funded: \$161,005.00					
0002	BASE Year - PWS Task 2. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. Product/Service Code: R499 Delivery: 02/28/2023 Accounting Info: 22-23-B-40DA-000B53-2505-2240SRE002-00 1 BFY: 22 EFY: 23 Fund: B Budget Org: 40DA Program (PRC): 000B53 Budget (BOC): 2505 DCN - Line ID: 2240SRE002-001 Funding Flag: Complete Funded: \$20,000.00				20,000.00	
0003	BASE Year - PWS Task 3. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate Continued ...				4,200.00	
TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))					\$24,200.00	

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
3

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 02/08/2022	CONTRACT NO. 68HERC21D0006	ORDER NO. 68HERC22F0099
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	List 6 Chemical Selection. Product/Service Code: R499 Delivery: 02/28/2023 Accounting Info: 22-23-B-40DA-000B53-2505-2240SRE002-00 1 BFY: 22 EFY: 23 Fund: B Budget Org: 40DA Program (PRC): 000B53 Budget (BOC): 2505 DCN - Line ID: 2240SRE002-001 Funding Flag: Complete Funded: \$4,200.00					
0004	Option Period 1 T&M Tasks for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. Time-and-Materials for PWS Task 9 with a ceiling value of \$32,926.00. (Option Line Item) 01/04/2023 Product/Service Code: R499 Delivery: 02/29/2024				32,926.00	
0005	Option Period 1 - PWS Task 10. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. (Option Line Item) 01/04/2023 Product/Service Code: R499 Delivery: 02/29/2024				15,000.00	
0006	Option Period 1 - PWS Task 11. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. (Option Line Item) 01/04/2023 Product/Service Code: R499 Delivery: 02/29/2024				18,000.00	
0007	Option Period 1 - PWS Task 12. FFP item for Continued Support for the Contaminant Continued ...				85,000.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$150,926.00

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
4

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 02/08/2022	CONTRACT NO. 68HERC21D0006	ORDER NO. 68HERC22F0099
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0008	Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. (Option Line Item) 01/04/2023 Product/Service Code: R499 Delivery: 02/29/2024 Option Period 2 T&M for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. Time-and-Materials - Admin. Support for Task 13 with a ceiling value of \$11,582.00. (Option Line Item) 01/04/2024 Product/Service Code: R499 Delivery: 02/28/2025				11,582.00	
0009	Option Period 2 - PWS Task 13. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. (Option Line Item) 01/04/2024 Product/Service Code: R499 Delivery: 02/28/2025				35,000.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$46,582.00

PERFORMANCE WORK STATEMENT

Contract 68HERC21D0006

Task Order: 68HERC22F0099

**TITLE: Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6
Chemical Selection**

PERIOD OF PERFORMANCE:

Base Year: 03/01/2022 – 02/28/2023

Option Year 1: 03/01/2023 – 02/29/2024

Option Year 2: 03/01/2024 – 02/28/2025

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I. BACKGROUND

The Safe Drinking Water Act (SDWA) as amended in 1996 requires EPA to publish a list of contaminants that are known or anticipated to occur in public water systems, and which may require regulation under the SDWA known as the Drinking Water Contaminant Candidate List, or CCL. (Section 1412(b)(1)). In developing the CCL, SDWA specifies that EPA consult with the scientific community including the Science Advisory Board (SAB).

EPA published the final CCL 4 in the Federal Register on November 17, 2016. CCL 4 was a carryover from CCL 3, with the following exceptions: 6 contaminants that were removed due to final or pending regulatory determinations (perchlorate; 1, 3-dinitrobenzene; dimethoate; terbufos; terbufos sulfone; and strontium), two contaminants that were added because of the public nominations process (manganese and nonylphenol), and 3 canceled pesticides that were removed based on public comment (fenamiphos, molinate, and disulfoton).

In developing CCL 3, EPA implemented an improved process from what was used for previous CCLs. The CCL 3 process was based on substantial expert input and recommendations from the National Academy of Science's National Research Council (NRC) and National Drinking Water Advisory Council (NDWAC). EPA used a multi-step process to identify contaminants for inclusion on the CCL 3. The first step involved identifying a broad universe of approximately 7,500 potential drinking water contaminants. The agency then applied screening criteria to identify a preliminary CCL (PCCL) of approximately 600 contaminants based on their potential to occur in public water systems and the potential for public health concern. These chemicals were then further evaluated using a classification approach and expert judgment to identify the CCL 3. For CCL 5, EPA is using the same overall framework of CCL 3 with modifications to further improve and streamline the process.

The Draft CCL 5 was published in July 2021 for public comment. The list includes a total of 81 contaminants or groups, including 66 chemicals and 3 chemical groups, and 12 microbes.

As part of the CCL process, on October 5, 2018, EPA requested public nominations of contaminants to be considered for CCL 5. EPA also requested supporting information that shows the nominated contaminant may have an adverse health effect on people and that it occurs or is likely to occur in public water systems.

Task order 68HERC22F0099 is a continuation of task order #68HERC21F0119. Under this task order, the agency is responding to public comments and SAB recommendations for CCL 5, analyzing the data provided in the public comments and SAB recommendations, improving and refining existing data files, and updating and finalizing technical support documents.

Additionally, under this task order, EPA is also conducting activities to develop CCL 6. Therefore, the agency would like to undertake a hybrid approach of using time and materials and firm fixed price to complete the tasks listed below. **A hybrid time and materials and firm fixed price approach is the most appropriate task order type for the requirements of this Task Order.**

The scope and size of Task 1, Task 4, and Task 5 depend on the number of recommendations that EPA receives as part of the SAB consultation and public nominations, respectively. Therefore, the most appropriate type of task order for these tasks is time and material. Similarly, the requirements for Task 6, Task 7, Task 8, and Task 9 are dependent on the number of changes and revisions identified in the quality assurance (QA) process, outcomes of future management decisions, and/or SAB recommendations. Therefore, the most appropriate type of task order for these tasks is also time and material.

This task order has been structured to minimize the use of time and material requirements. **To achieve this, a firm-fixed price approach is requested for Task 2, Task 3, Task 10, Task 11, Task 12 and Task 13.**

II. TASKS

Base Year (March 1, 2022 – February 28, 2023)

Task 0. Task Order Administration

Within ten (10) days of task order award, the contractor shall schedule a conference call with the EPA TOCOR to clarify outstanding questions and confirm the schedule and specific tasks.

The contractor shall provide status updates to the EPA TOCOR by conference call periodically (approximately biweekly or more frequently as necessary) to discuss progress, challenges, and decisions regarding next steps. The contractor shall initiate additional communication with the EPA TOCOR should developments arise that will affect the conduct or schedule of the project.

Quality assurance (QA) is an important component of EPA's work to assure that environmental information is appropriate for its intended use. Therefore, consistent with the agency's QA requirements, the contractor shall develop a project-specific QA project plan (PQAPP) as indicated in Section III below within 2 weeks of the task order award. If changes are deemed necessary by the EPA TOCOR, a revised PQAPP shall be submitted to the EPA TOCOR within 2 weeks of receiving comments from the EPA TOCOR. The project specific quality assurance requirements must be addressed in the monthly progress reports.

The contractor shall include in their monthly reports any adjustments to their quality assurance plan necessitated by unanticipated needs for specialized quality assurance measures.

Deliverables:

- 0.1 Initial conference call with the EPA TOCOR
- 0.2 PQAPP
- 0.3 Monthly Progress Reports

Task 1. Data Analysis and Evaluation

The contractor shall support EPA's data analysis and evaluation of the SAB recommendations, public comments and other data analysis and manipulation requested by the EPA management. The contractor shall compile a summary (table or spreadsheets) of any new data sources submitted with the SAB recommendation and/or public comments and compare this data to the data EPA has previously collected in the CCL 5 Universe to determine whether the data provided is new. If new data is submitted, the contractor shall evaluate and document whether the data meets the assessment factors (developed under CCL 5) to be considered in the CCL process (i.e., is the data relevant, is the data complete (including meeting quality requirements), is the data redundant with any other more comprehensive data sources), and is the data retrievable, and evaluate whether the data could be used for screening and scoring based on the data hierarchies developed under CCL 5. This is to ensure that the best available data is used in the CCL 5 development process. If a data source can be used in the CCL 5 process (based on the factors described above), at the written direction of the EPA TOCOR, the contractor shall extract available data elements in a simple Microsoft Excel spreadsheet. If needed, per technical direction, the contractor shall conduct statistical analyses on the new data provided (e.g., calculate mean, median, 90th percentile, and max concentrations) so that EPA can re-screen and/or re-score the contaminants and document any changes to the draft CCL 5.

If recommendations are made on the development of the Draft CCL 5, the contractor shall, at the direction of the EPA TOCOR, provide a spreadsheet(s) or other analyses (including those completed under sub-task 4.3) showing how those changes would impact the CCL 5 Universe, PCCL, and/or final CCL. The contractor shall also, at the written direction of the EPA TOCOR, provide written descriptions of how such changes would impact the CCL 5 process.

Deliverables:

- 1.1 Draft(s) of summary spreadsheet(s) of any data/data source submitted with the SAB recommendations and/or public comments.
- 1.2 Final summary spreadsheet of any data/data source submitted with the SAB recommendations and/or public comments.
- 1.3 Draft(s) of summaries of changes between the Draft CCL 5 Universe, PCCL, and CCL.
- 1.4 Final summary of changes between the Draft CCL 5 Universe, PCCL, and CCL.
- 1.5 Draft written description of CCL 5 impacts of suggested changes.
- 1.6 Final written description of CCL 5 impacts of suggested changes.

Task 2. Support documents for Final CCL 5 publication

EPA is in the process of updating technical support documents for the Final CCL 5. The contractor shall provide support with formatting, drafting and revising tables, designing diagrams, figures, providing editorial review, etc., and ensuring that the support documents are 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials that will be provided to the contractor.

Upon written technical direction from the EPA TOCOR, the contractor shall edit support documents based on any changes made between the Draft CCL 5 and Final CCL 5 based on public, SAB, workgroup or management comments.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Final CCL 5 Technical Support Document and other support documents (CIS document, Response to Comments (RTC), response to the SAB report, etc.) for finalizing the CCL 5.

Deliverables:

- 2.1 Draft(s) of support documents for the Final CCL 5.
- 2.2 Final support documents for the Final CCL 5 (508 compliant).

Task 3. Meeting Support for SAB Panel Deliberations

The contractor shall attend up to two 5-hour meetings related to the CCL 5 process and the Draft CCL 5. The contractor shall provide for the taking of meeting notes and shall provide a copy of the draft summary of the meeting notes to the EPA TOCOR within 5 working days of the conclusion of the meeting. Per the EPA TOCOR technical direction, the contractor shall provide the final summary of the meeting notes.

Deliverables:

- 3.1 Draft summary of meeting notes.
- 3.2 Final summary of meeting notes.

Task 4. Review/Update Data Sources and Data Collection

Upon written technical direction from the EPA TOCOR, the contractor shall evaluate the data sources that have been updated since the CCL 5 data collection cut-off date and new potential data sources for use in CCL 6. The potential data sources shall include those that were not considered for CCL 3, CCL 4, or CCL 5 and that became available after the data collection cut-off date for CCL 5. During this evaluation, the contractor shall consider the assessment factors of relevance, completeness, redundancy, and retrievability as described in the Draft CCL 5 Technical Support Document. The contractor shall list and summarize the potential data sources in a Microsoft Excel file and update the data sources. The summaries shall identify new data sources, flag the data sources that need to be updated, and provide any other relevant information. Based upon written technical direction, the contractor shall collect data from a select number of new and/or updated data sources specified by the EPA TOCOR and provide summary spread sheets or documents for existing and potentially new data sources that may be deemed necessary per EPA TOCOR. At the direction of the EPA TOCOR, the contractor shall continue to update the Final CCL 5 data compilation for CCL 6. The data compilation shall meet OGWDW and EPA data warehouse standards.

Deliverables:

- 4.1 Draft lists and summaries of new data sources in Excel.
- 4.2 Final lists and summaries of new data sources in Excel.
- 4.3 Draft summaries of extracted and analyzed data in a table format
- 4.4 Final summaries of extracted and analyzed data in a table format

Task 5. Evaluation and Summaries of Nominated Contaminants

Upon written technical direction from the EPA TOCOR, the contractor shall identify and evaluate relevant data submitted during the CCL 6 public nominations process. The contractor shall provide summaries of the relevant data in a table format.

Deliverables:

- 5.1 Draft summaries of the relevant data in a table format
- 5.2 Final summaries of the relevant data in a table format.

Task 6: Continue revising and updating the quality assurance/quality control (QA/QC reports for the CISs

Under WA 5-06 and TO 68HERC21F0119, Cadmus produced drafts of the CCL Data Management and QA/QC Report which detailed the data management and QA/QC processes used to produce the internal-use CISs and the Draft CCL 5 Chemical Contaminant Information Sheets Technical Support (aka external-facing CISs published with the Draft CCL 5). This task presents continuation of that work.

Upon written technical direction from the EPA TOCOR, Cadmus shall update the CCL Data Management and QA/QC Report, at a minimum, with the data management and QA/QC process conducted to produce the external-facing CISs for the Final CCL 5.

The report shall include a description of any QA/QC conducted on the data (i.e. input files) and manual QA/QC of the CISs. The report shall also include any description of the QA/QC process conducted on the code used to generate the simple files and populate the CISs. The report shall provide concepts and generalized processes for the different types of files mentioned above (i.e. simple input files, CIS, code for data files, and code for CISs).

Deliverables:

- 6.1 Draft(s) of the CCL Data Management and QA/QC Report
- 6.2 Final CCL Data Management and QA/QC Report

Task 7: Continue writing a data management and QA/QC scoping document for CCL 6

Under TO 68HERC21F0119, Cadmus delivered a draft data management and QA/QC scoping document for CCL 6. Upon written technical direction from the EPA TOCOR, Cadmus shall update the draft data management and QA/QC scoping document for CCL 6 and produce a final data management and QA/QC scoping document for CCL 6. The plan shall include, but is not limited to, the following components and considerations: database design, data quality management, data acquisition and storage, data modeling, and metadata management.

CCL data (i.e. primary and supplemental data) is compiled at different phases of CCL development process, and used in different aspects of the CCL development process (e.g. screening code, generating the CISs, and classification models). At the direction of the TOCOR, the contractor shall include a schema within the data management scoping document that takes all CCL data-related needs into account. For example, a subset of data elements from all data associated with Universe chemicals is used in the screening code, whereas nearly all data elements associated with PCCL chemicals are used in classification and included on the CISs. If CCL data are moved to a relational database (e.g. MySQL or Microsoft Access), the database needs to be designed so that data can be queried or integrated for use in the screening code and for developing the CISs.

Additionally, at the direction of the EPA TOCOR, the data management plan and QA/QC scoping document shall include considerations for data accessibility that simplifies access to the data for EPA staff and the public. At the direction of the EPA TOCOR, the contractor shall consider alternative methods for the CIS, such as an online data dashboard (e.g. R Shiny or Qlik) or creating tables and forms in Microsoft Access.

Deliverables:

- 7.1 Draft(s) of Data Management and QA/QC scoping document.
- 7.2 Final Data Management and QA/QC scoping document.

Task 8. Continue improving and refining existing data files and code

In preparation for CCL 6, the contractor shall continue to support EPA's efforts to improve and/or revise existing data files and code and document the changes and improvements.

Sub-task 8.1: Continue improving the CIS data files

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall iteratively:

1. Revise and/or update the new data file format (as needed).
2. Reduce the number of data source files and/or revise data source files used in the CISs (e.g., combine data files that contain redundant data or combine similar data into a single file).
3. Conduct quality assurance, make corrections, and/or updates, if necessary, to data that were provided by EPA or the data that were generated by the contractor, such as conduct quality assurance/quality control analysis on health and occurrence attribute scores and cross reference the scores to the attribute scoring protocols, etc.
4. Document the changes and improvements to the CIS files, quality assurance activities, results and remediation steps of the QA/QC in a CCL 5 Data Improvement report, etc.

Improving the CIS data files will be an iterative process. Therefore, the contractor shall write and provide draft versions of the CCL 5 Data Improvement report, and revise/update it, as the contractor makes additional revisions/corrections to the CIS data files, as directed by the EPA TOCOR. EPA expects that improving the CIS data files will consist of approximately 5 iterations. Upon completion of CIS data files improvements, the contractor shall finalize the CCL 5 Data Improvement report, as directed by the EPA TOCOR.

Deliverables:

- 8.1.1 Revised and/or corrected data source files.
- 8.1.2 Iterative draft versions of the CCL 5 Data Improvement report.
- 8.1.3 Draft(s) of the CCL 5 Data Improvement report.
- 8.1.4 Final CCL 5 Data Improvement report.

Sub-task 8.2: Continue improving screening files

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall:

1. Conduct quality assurance activities on existing data files used in the screening step. Quality assurance activities may include, but are not limited to, checking inconsistencies between primary data source files used in screening vs classification and/or checking and correcting DTXSIDs.
2. Acquire and/or conduct analyses on the data (e.g., download data and calculate summary statistics).
3. Transform the data into the “simple file” format.
4. Document the results of the above analyses and quality assurance activities in report documents (spreadsheets and/or Word documents).

For example: EPA needs to identify existing errors in DTXSID assignments to contaminants in the Pre-Universe and/or Universe files used for screening. Cadmus shall conduct QA/QC on screening files to identify any errors and make corrections. Cadmus shall document QAQC activities, the findings, and corrections made in a summary document.

Deliverables:

- 8.2.1 Updated and/or revised data files.
- 8.2.2 Documents detailing the analyses and quality assurance activities.

Sub-task 8.3: Continue operating the screening code and conducting analysis of output

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall revise, update, and/or run the code EPA developed to generate the PCCL 5. This code is hereafter referred to as “screening code” and is further described in the numbered list below. Per technical direction, using the screening code, the contractor

shall generate input and output files, and analyze and document how contaminants are screened. The contractor shall revise, update, and/or run the screening code to prepare for the Final CCL 5 and for CCL 6.

EPA expects that the contractor will operate the screening code, make revisions and/or updates, and analyze the output approximately 6 times to prepare for the Final CCL 5. EPA expects that the contractor will operate the screening code, make revisions, and/or updates and analyze the output approximately 8 times for CCL 6.

The screening code, documented in R Markdown, consists of four primary components:

1. “Pre-processing” primary data sources: A series of individual R Markdown documents dedicated to pre-processing a primary data source. The pre-processing scripts extract and transform data elements relevant to screening into a simple file format. The outputs of the pre-processing scripts are simple data files associated with each primary data source.
2. “Making the Pre-Universe”: This R Markdown document aggregates the simple data files produced from the pre-processing code into the pre-universe file.
3. “ID and Screen”: This R Markdown document contains manual corrections to DTXSIDs, assigns unique internal-use NO_DTXSID identifiers to contaminants without existing DTXSIDs, and adds data from the CompTox Chemicals Dashboard. The input file is the pre-universe file and the output of this code is the universe file.
4. “Screening”: This R Markdown document uses the data in the universe file, establishes the screening point hierarchy using statistical methods (quantiles and summary statistics), assigns screening points according to the screening point assignment hierarchy, and calculates the screening score for each contaminant in the universe. The outputs of this code are the Scored Universe file and PCCL file.

Additionally, upon written technical direction from the EPA TOCOR, the contractor shall develop a method for version control and file sharing to manage and track changes to the screening code to facilitate collaboration with EPA (e.g., screening code is managed on a Git repository that EPA and the contractor can easily access).

Furthermore, the contractor shall conduct and document QA/QC activities while operating, revising, and updating the screening code and conducting analyses, as directed by the EPA TOCOR. QA/QC activities may include, but are not limited to, code reviews after changes are made, checking that screening points are assigned to data elements correctly, checking unit conversions, calculating the screening scores of a random sample of chemicals in the Scored Universe file to confirm the expected screening score.

The contractor shall document the QA/QC activities and analyses in a summary document and/or spreadsheet.

Example 1: EPA needs to include new or revised data (e.g. finalized UCMR 4 data) into the screening code or changes how a data element is assigned screening points (e.g. change a non-national representative water study to a nationally-representative water study). This type of change involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code, update the code, and generate output files for EPA. The contractor shall conduct an analysis that compares the draft PCCL 5 to the updated PCCL and generate an updated screening point hierarchy. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Example 2: EPA needs to test out a new screening point hierarchy, incorporate new CCL 6 data sources, and obtain a new Scored Universe file for CCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output

files for EPA. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Deliverables:

- 8.3.1 Screening code input and output files.
- 8.3.2 Screening code output analyses summary documents.
- 8.3.3 Screening code with documented changes on a code repository site.
- 8.3.4 Documents containing the analyses and quality assurance activities.

Option year 1 (March 1, 2023 – February 29, 2024)

Task 9: Continue operating the screening code and conducting analysis of output

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall revise, update, and/or run the code EPA developed to generate the PCCL 5. This code is hereafter referred to as “screening code” and further described in the numbered list below. Per technical direction, using the screening code, the contractor shall generate input and output files, and analyze and document how contaminants are screened. The contractor shall revise, update, and/or run the screening code for CCL 6 and to generate the PCCL 6.

EPA expects that the contractor will operate the screening code, make revisions, and/or updates and analyze the output approximately 4 times for CCL 6.

The screening code, documented in R Markdown, consists of four primary components:

1. “Pre-processing” primary data sources: A series of individual R Markdown documents dedicated to pre-processing a primary data source. The pre-processing scripts extract and transforms data elements relevant to screening into a simple file format. The outputs of the pre-processing scripts are simple data files associated with each primary data source.
2. “Making the Pre-Universe”: This R Markdown document aggregates the simple data files produced from the pre-processing code into the pre-universe file.
3. “ID and Screen”: This R Markdown document contains manual corrections to DTXSIDs, assigns unique internal-use NO_DTXSID identifiers to contaminants without existing DTXSIDs, and adds data from the CompTox Chemicals Dashboard. The input file is the pre-universe file and the output of this code is the universe file.
4. “Screening”: This R Markdown document uses the data in the universe file, establishes the screening point hierarchy using statistical methods (quantiles and summary statistics), assigns screening points according to the screening point assignment hierarchy, and calculates the screening score for each compound in the universe. The outputs of this code are the Scored Universe file and PCCL file.

Additionally, upon written technical direction from the EPA TOCOR, the contractor shall develop a method for version control and file sharing to manage and track changes to the screening code to facilitate collaboration with EPA (e.g., screening code is managed on a Git repository that EPA and the contractor can easily access).

Furthermore, the contractor shall conduct and document QA/QC activities while operating, revising, and updating the screening code and conducting analyses, as directed by the EPA TOCOR. QA/QC activities may include, but are not limited to, code reviews after changes are made, checking that screening points are assigned

to data elements correctly, checking unit conversions, calculating the screening scores of a random sample of chemicals in the Scored Universe file to confirm the expected screening score.

The contractor shall document the QA/QC activities and analyses in a summary document and/or spreadsheet.

For example: EPA needs to update the screening point hierarchy, incorporate several new primary data sources into the screening step, and obtain the PCCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output files for EPA. The contractor shall document the analyses and results, and QA/QC activities in a summary document.

Deliverables:

- 9.1 Screening code input and output files.
- 9.2 Screening code output analyses summary documents.
- 9.3 Screening code with documented changes on a code repository site.
- 9.4 Documents containing the analyses and QA/QC activities.

Task 10. Calculate Final Hazard Quotients and Attribute scores

Per technical direction from the EPA TOCOR, the contractor shall identify data and derive and select the final Hazard Quotients (fHQs) and final prevalence and magnitude attribute scores for up to 600 chemical contaminants.

Deliverables:

- 10.1 Draft values for attribute scores and fHQs.
- 10.2 Final values for attribute scores and fHQs.

Task 11. Literature Review

Similar to CCL 5, EPA will be screening the Universe of contaminants for CCL 6 down to a Preliminary CCL (PCCL) using available occurrence and health effects data in the compiled contaminant prioritization data set. To evaluate the PCCL, and narrow it down to a draft CCL, a literature search will be conducted to identify supplemental occurrence data which would not have been included in the Universe because the data did not meet the requirements of a primary data source used to develop the Universe. Per technical direction from the EPA TOCOR, the contractor shall conduct a systematic literature search and review for occurrence data for up to 300 PCCL contaminants. It is assumed that the contaminants are data rich. This will help to ensure that the best available data is being used in the CCL classification step.

Deliverables:

- 11.1 Draft results of occurrence literature search.
- 11.2 Final results of occurrence literature search.

Task 12. Support documents for Draft CCL 6 publication

Per technical direction from the EPA TOCOR, the contractor shall support the drafting and revising of the technical support documents for the draft CCL 6. This includes support with drafting and revising chapters, formatting, drafting and revising tables, designing diagrams, figures, providing editorial review etc., and making support documents 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials that will be provided to the contractor.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Draft CCL 6 Technical Support Document and other support documents (CIS document, RTC, response to the SAB report, etc.) for finalizing the CCL 5.

For the CIS technical support document, the process is assumed to be similar to the Draft CCL 5, but more efficient as a result of the improvements made in Task Order # 68HERC21F0119.

Deliverables:

- 12.1 Draft(s) of support documents for the Draft CCL 6.
- 12.2 Final support documents for the Draft CCL 6 (508 compliant).

Option Year 2 (March 1, 2024 – February 28, 2025)

Task 13. Support documents for Final CCL 6 publication

Per technical direction from the EPA TOCOR, the contractor shall support the drafting and revising of the technical support documents for the draft CCL 6. This includes support with drafting and revising chapters, formatting, drafting and revising tables, designing diagrams, figures, providing editorial review etc., and making support documents 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials.

Based on written technical direction from the EPA TOCOR, the contractor shall edit support documents based on any changes made between the Draft CCL 5 and Final CCL 5 based on public, SAB, workgroup or management comments.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Final CCL Technical Support Document and other support documents (CIS document, RTC, response to the SAB report, etc.) for finalizing the CCL 5.

Deliverables:

- 13.1 Draft(s) of support documents for the Final CCL 6.
- 13.2 Final support documents for the Final CCL 6 (508 compliant).

III. QUALITY ASSURANCE REQUIREMENTS

The tasks in this task order require the use of primary and/or secondary data. Therefore, consistent with the Agency's quality assurance (QA) requirements, the contractor shall develop a project-specific quality assurance project plan (PQAPP), to ensure that data of sound quality is used to complete these tasks. In addition,

throughout the course of this task order, if it is determined that the PQAPP requires any revision, the contractor shall provide the necessary changes to the EPA TOCOR.

IV. SCHEDULE OF DELIVERABLES

The contractor shall send EPA all deliverables in accordance with the terms of the contract.

All reports shall be provided first in draft form. Upon receipt of comments from the EPA TOCOR, the contractor shall revise the deliverable and distribute final copies as stated in the Performance Work Statement.

Tasks	Item	Due	Method of Delivery
Task 0. Task Order Administration			
0.1	Initial Conference Call with TOCOR	Within 10 days of the TO award	Conference Call
0.2	PQAPP	Within 2 weeks of the TO award	Electronic
0.3	Monthly Progress Reports	Monthly	Electronic
Task 2: Data Analysis and Evaluations			
1.1	Draft(s) of summary spreadsheet(s) of any data/data source submitted with the SAB recommendations and/or public comments.	Per technical direction	Electronic
1.2	Final summary spreadsheet of any data/data source submitted with the SAB recommendations and/or public comments.	Per technical direction	Electronic
1.3	Draft(s) of summaries of changes between the Draft CCL 5 Universe, PCCL, and CCL.	Per technical direction	Electronic
1.4	Final summary of changes between the Draft CCL 5 Universe, PCCL, and CCL.	Per technical direction	Electronic
1.5	Draft written description of CCL 5 impacts of suggested changes.	Per technical direction	Electronic

1.6	Final written description of CCL 5 impacts of suggested changes.	Per technical direction	Electronic
Task 2. Finalize support documents for draft CCL 5 publication			
2.1	Draft(s) of support documents for the final CCL 5.	Per technical direction	Electronic
2.2	Final support documents for the final CCL 5 (508 compliant).	Per technical direction	Electronic
Task 3. Meeting Support for the CCL			
3.1	Draft meeting notes	5 days after the meeting	Electronic
3.2	Final meeting notes	Per technical direction	Electronic
Task 4. Review and Update Data Sources			
4.1	Draft lists and summaries of new data sources in Excel.	Per technical direction	Electronic
4.2	Final lists and summaries of new data sources in Excel.	Per technical direction	Electronic
4.3	Draft summaries of extracted and analyzed data in a table format.	Per technical direction	Electronic
4.4.	Final summaries of extracted and analyzed data in a table format.	Per technical direction	Electronic
Task 5. Evaluation and Summaries of Nominated			
5.1	Draft summaries of the relevant data in a table format.	Per technical direction	Electronic
5.2	Final summaries of the relevant data in a table format.	Per technical direction	Electronic
Task 6: Continue revising and updating the QA/QC reports for the CISs			
6.1	Draft(s) of the CCL Data Management and QA/QC Report	Per technical direction	Electronic
6.2	Final CCL Data Management and QA/QC Report	Per technical direction	Electronic
Task 7: Continue writing the data management and QA/QC scoping document for CCL 6			
7.1	Draft(s) of Data Management and	Per technical direction	Electronic

	QA/QC scoping document.		
7.2	Final Data Management and QA/QC scoping document.	Per technical direction	Electronic
Task 8. Continue improving and refining existing data files and code			
Sub-task 8.1: Continue improving the CIS data			
8.1.1	Revised and/or corrected data source files.	Per technical direction	Electronic
8.1.2	Iterative draft versions of the CCL 5 Data Improvement report.	Per technical direction	Electronic
8.1.3	Draft(s) of the CCL 5 Data Improvement report.	Per technical direction	Electronic
8.1.4	Final CCL 5 Data Improvement report.	Per technical direction	Electronic
Sub-task 8.2: Continue improving screening files			
8.2.1	Updated and/or revised data files.	Per technical direction	Electronic
8.2.2	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Sub-task 8.3: Continue operating the screening code and conducting analysis of output			
8.3.1	Screening code input and output files.	Per technical direction	Electronic
8.3.2	Screening code output analyses summary documents.	Per technical direction	Electronic
8.3.3	Screening code with documented changes on a code repository site.	Per technical direction	Electronic
8.3.4	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Task 9: Continue operating the screening code and conducting analysis of output			
9.1	Screening code input and output files.	Per technical direction	Electronic
9.2	Screening code output analyses summary documents.	Per technical direction	Electronic
9.3	Screening code with documented changes on a code repository site.	Per technical direction	Electronic

9.4	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Task 10. Calculate Final Hazard Quotients and Attribute scores			
10.1	Draft values for attribute scores and fHQs.	Per technical direction	Electronic
10.2	Final values for attribute scores and fHQs.	Per technical direction	Electronic
Task 11. Literature Review			
11.1	Draft results of occurrence literature search.	Per technical direction	Electronic
11.2	Final results of occurrence literature search.	Per technical direction	Electronic
Task 12. Support documents for Draft CCL 6 publication			
12.1	Draft(s) of supporting documents for the Draft CCL 6.	Per technical direction	Electronic
12.2	Final supporting documents for the Draft CCL 6 (508 compliant).	Per technical direction	Electronic
Task 13. Support documents for Final CCL 6 publication			
13.1	Draft(s) of support documents for the Final CCL 6.	Per technical direction	Electronic
13.2	Final support documents for the Final CCL 6 (508 compliant).	Per technical direction	Electronic

V. PERFORMANCE STANDARDS AND MEASURES

The following standards will be used to measure performance.

1. Quality of Products: All tasks are to be of superior quality. The quality of outputs will be measured against similar analyses and work already performed by EPA.
2. Schedule: All tasks are to be completed on, or ahead of schedule as measured against the acceptance criteria.
3. Ingenuity and Resourcefulness: New issues are addressed using innovative analyses. Ingenuity and resourcefulness will be measured by the ability to use innovative analyses to address new issues not previously identified.
4. Quality assurance: Adhere to both Contract level QAPP and PQAPP.

VI. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the agency's official representative. The contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the CO, CL-COR and/or TOCOR.

VII. STATUS NOTIFICATION

The contractor shall notify the EPA PO and program office contact when 75% of the funds provided have been expended or when funding for less than 6 weeks work remains. The contractor shall also notify the TOCOR when 75% of the funds have been used on any single case assignment. Notifications shall be in writing and cc'd to the Project Officer.

SECTION B - Supplies or Services/Prices

B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION

- (a) Severable services may be incrementally funded. Non-severable services shall not be incrementally funded. Contract line item 0001 is severable and may be incrementally funded. For this item, the sum of \$161,005.00 of the total price is presently available for payment and allotted to this item. Contract line items 0002 and 0003 are issued on a Firm-Fixed-Price basis and are fully funded.
- (b) For items identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those items for the Government's convenience, approximates the total amount currently allotted for those items to the contract. The Contractor shall not continue work on those items beyond that point. Subject to the clause entitled "Termination for Convenience of the Government," the Government will not be obligated, under any circumstances, to reimburse the Contractor in excess of the amount payable by the Government in the event of the termination of applicable contract line items for convenience including costs, profit, and estimated termination costs for those line items.
- (c) Notwithstanding the dates specified in the allotment schedule in paragraph (h) of this clause, the Contractor will notify the Contracting Officer, in writing, at least 10 days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount currently allotted to the contract for performance of the applicable items. The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the applicable line items up to the next scheduled date for the allotment of funds identified in paragraph (a) of this clause, or to a substitute date as determined by the Government pursuant to paragraph (d) of this clause. If, after such notification, additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause entitled "Termination for Convenience of the Government."
- (d) The parties contemplate that, subject to the availability of appropriations, the Government may allot additional funds for continued performance of the contract line items identified in paragraph (a) of this clause and will determine the estimated period of contract performance which will be covered by the funds. If additional funds are allotted, the Contracting Officer will notify the Contractor in writing. The Contractor shall not resume performance of the contract line items identified in paragraph (a) until the written notice is received. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and to the new estimated period of contract performance. The contract will be modified accordingly.
- (e) The Government may, at any time prior to termination, allot additional funds for the performance of the contract line items identified in paragraph (a) of this clause.
- (f) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default". The provisions of this clause are limited to the work and allotment of funds for the contract line items set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded.
- (g) Nothing in this clause affects the right of the Government to otherwise terminate this contract pursuant to the contract clause entitled "Termination for Convenience of the Government".
- (h) The parties contemplate that the Government may obligate funds to this contract in accordance with the following schedule:

RECAPITULATION:

RECAPITULATION OF FUNDING TO DATE – LINE ITEM 0001
CONTRACT NO. 68HERC21D0006
TASK ORDER NO. 68HERC22F0099

Period of Performance - FROM 03/01/2022 through 02/28/2023

<u>FUNDING ACTION</u>	<u>FUNDING</u>	
Total Line Item 0001 Amount:	\$	168,009.00
Initial Incremental Funding:	\$	161,005.00
Balance Unfunded	\$	7,004.00

SECTION F - Deliveries or Performance

F-1 Local Clauses EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this Task Order period (Base Period) shall be from 03/01/2022 through 02/28/2023 inclusive of all required reports.

Option Period 1, if exercised, shall have a period of performance from 03/01/2023 through 02/29/2024 inclusive of all required reports.

Option Period 2, if exercised, shall have a period of performance from 03/01/2024 through 02/28/2025 inclusive of all required reports.

SECTION G - Contract Administration Data

G-1 Local Clauses EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Iliriana Mushkolaj, 202-564-6877, Mushkolaj.iliriana@epa.gov	(TOCOR)
Kesha Forrest, 202-564-3632, forrest.kesha@epa.gov	(Alternate TOCOR)
Lameka Smith, 202-564-1629, smith.lameka@epa.gov	(Alternate TOCOR)

Contracting Officials responsible for administering this contract are as follows:

Keith Pfeffer, 513-487-2034, pfeffer.keith@epa.gov	(Contracting Officer)
John Krauss, 513-487-2148, krauss.john@epa.gov	(Contract Specialist)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. P00001		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
6. ISSUED BY CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001		CODE CAD		5. PROJECT NO. (If applicable)	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) Cadmus Group LLC, The Attn: JOEL DEMASI 100 5TH AVENUE SUITE 100 WALTHAM MA 024518727		(x)		9A. AMENDMENT OF SOLICITATION NO.	
CODE WSEZME8NNBA8		FACILITY CODE		9B. DATED (SEE ITEM 11)	
		x		10A. MODIFICATION OF CONTRACT/ORDER NO. 68HERC21D0006 68HERC22F0099	
				10B. DATED (SEE ITEM 13) 02/08/2022	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

UEI: WSEZME8NNBA8

TOCOR: Lameka Smith Max Expire Date: 02/28/2025 Invoice Approver: Lameka Smith Alt Invoice

App: Kesha Forrest

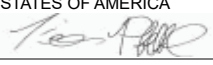
The purposes of this Modification are to:

1. Change the primary TOCOR (Task Order Contracting Officer's Representative) from Iliriana Mushkolaj to Lameka Smith; and

2. Change the Invoice Approving Official from Iliriana Mushkolaj to Lameka Smith.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

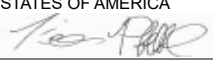
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Keith Pfeffer	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 04/11/2022

Previous edition unusable

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED 68HERC21D0006/68HERC22F0099/P00001	PAGE	OF
		2	2

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>All other task order terms and conditions remain unchanged.</p> <p>Payment:</p> <p> RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 </p> <p>Period of Performance: 03/01/2022 to 02/28/2025</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES		
					12		
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
P00002		See Block 16C		PR-OW-22-00803			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
CAD							
US Environmental Protection Agency							
26 West Martin Luther King Drive							
Mail Code: W136							
Cincinnati OH 45268-0001							
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(x)		9A. AMENDMENT OF SOLICITATION NO.	
Cadmus Group LLC, The							
Attn: JOEL DEMASI							
100 5TH AVENUE						9B. DATED (SEE ITEM 11)	
SUITE 100							
WALTHAM MA 024518727				x		10A. MODIFICATION OF CONTRACT/ORDER NO.	
						68HERC21D0006	
						68HERC22F0099	
						10B. DATED (SEE ITEM 13)	
						02/08/2022	
CODE		WSEZME8NNBA8		FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.							
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
See Schedule							
Net Increase: \$26,972.00							
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
CHECK ONE							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
X B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION							
E. IMPORTANT: Contractor <input checked="" type="checkbox"/> is not <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
UEI: WSEZME8NNBA8							
TOCOR: Lameka Smith Max Expire Date: 02/28/2025 Invoice Approver: Lameka Smith Alt Invoice							
App: Kesha Forrest							
The purposes of this Modification are to:							
1) Amend the Task Order Performance Work Statement (PWS), as attached;							
2) Increase Line Item 0001's (Base Period) total T&M ceiling value to \$187,977.00, as detailed below and in the attached Funding Recap Sheet; and							
3) Add incremental funding to Line Item 0001 in the total T&M amount of \$26,972.00, as							
Continued ...							
Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				Keith Pfeffer			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
(Signature of person authorized to sign)						08/17/2022	
				ELECTRONIC SIGNATURE			
				(Signature of Contracting Officer)			

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED 68HERC21D0006/68HERC22F0099/P00002	PAGE	OF
		2	2

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>detailed below and in the attached Funding Recap Sheet.</p> <p>LIST OF CHANGES:</p> <p>Obligated Amount for this Modification: \$26,972.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Total Amount changed from \$168,009.00 to \$187,977.00</p> <p>Obligated Amount for this Modification: \$26,972.00</p> <p>Incremental Funded Amount changed from \$161,005.00 to \$187,977.00</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 22-23-B-40DF-000B53-2505-2240SRE044-001 Beginning FiscalYear 22 Ending Fiscal Year 23 Fund (Appropriation) B Budget Organization 40DF Program (PRC) 000B53 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 2240SRE044-001 Quantity: 0 Amount: \$26,972.00</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 03/01/2022 to 02/28/2025</p>				

PERFORMANCE WORK STATEMENT
Contract 68HERC21D0006
Task Order # 68HERC22F0099- AMENDMENT 1

**TITLE: Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6
Chemical Selection**

PERIOD OF PERFORMANCE:

Base Year: 03/01/2022 – 02/28/2023

Option Year 1: 03/01/2023 – 02/29/2024

Option Year 2: 03/01/2024 – 02/28/2025

EPA CONTACTS

TASK ORDER COR:

Lameka Smith
Office of Ground Water and Drinking
Water (OGWDW)
1200 Pennsylvania Avenue, NW
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ALTERNATE TASK ORDER COR:

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I. BACKGROUND

The Safe Drinking Water Act (SDWA) as amended in 1996 requires EPA to publish a list of contaminants that are known or anticipated to occur in public water systems, and which may require regulation under the SDWA known as the Drinking Water Contaminant Candidate List, or CCL. (Section 1412(b)(1)). In developing the CCL, SDWA specifies that EPA consult with the scientific community including the Science Advisory Board (SAB).

EPA published the final CCL 4 in the Federal Register on November 17, 2016. CCL 4 was a carryover from CCL 3, with the following exceptions: 6 contaminants that were removed due to final or pending regulatory determinations (perchlorate; 1, 3-dinitrobenzene; dimethoate; terbufos; terbufos sulfone; and strontium), two contaminants that were added because of the public nominations process (manganese and nonylphenol), and 3 canceled pesticides that were removed based on public comment (fenamiphos, molinate, and disulfoton).

In developing CCL 3, EPA implemented an improved process from what was used for previous CCLs. The CCL 3 process was based on substantial expert input and recommendations from the National Academy of Science's National Research Council (NRC) and National Drinking Water Advisory Council (NDWAC). EPA used a multi-step process to identify contaminants for

inclusion on the CCL 3. The first step involved identifying a broad universe of approximately 7,500 potential drinking water contaminants. The agency then applied screening criteria to identify a preliminary CCL (PCCL) of approximately 600 contaminants based on their potential to occur in public water systems and the potential for public health concern. These chemicals were then further evaluated using a classification approach and expert judgment to identify the CCL 3. For CCL 5, EPA is using the same overall framework of CCL 3 with modifications to further improve and streamline the process.

The Draft CCL 5 was published in July 2021 for public comment. The list includes a total of 81 contaminants or groups, including 66 chemicals and 3 chemical groups, and 12 microbes.

As part of the CCL process, on October 5, 2018, EPA requested public nominations of contaminants to be considered for CCL 5. EPA also requested supporting information that shows the nominated contaminant may have an adverse health effect on people and that it occurs or is likely to occur in public water systems.

Under this task order, the agency is responding to public comments and SAB recommendations for CCL 5, analyzing the data provided in the public comments and SAB recommendations, improving and refining existing data files, and updating and finalizing technical support documents.

Additionally, under this task order, EPA is also conducting activities to develop CCL 6. Therefore, the agency would like to undertake a hybrid approach of using time and materials and firm fixed price to complete the tasks listed below. A hybrid time and materials and firm fixed price approach is the most appropriate task order type for the requirements of this Task Order.

The scope and size of Task 1, Task 4, and Task 5 depend on the number of recommendations that EPA receives as part of the SAB consultation and public nominations, respectively. Therefore, the most appropriate type of task order for this task is time and material.

Similarly, the requirements for Task 6, Task 7, Task 8, and Task 9 are dependent on the number of changes and revisions identified in the quality assurance (QA) process, outcomes of future management decisions, and/or SAB recommendations. Therefore, the most appropriate type of task order for this task is time and material.

This task order has been structured to minimize the use of time and material requirements. This has been accomplished by establishing a firm fixed price for Task 2, Task 3, Task 10, Task 11, Task 12 and Task 13.

II. TASKS

Base Year (March 1, 2022 – February 28, 2023)

Task 0. Task Order Administration

Within ten (10) days of task order award, the contractor shall schedule a conference call with the EPA TOCOR to clarify outstanding questions and confirm the schedule and specific tasks.

The contractor shall provide status updates to the EPA TOCOR by conference call periodically (approximately biweekly or more frequently as necessary) to discuss progress, challenges, and decisions regarding next steps. The contractor shall initiate additional communication with the EPA TOCOR should developments arise that will affect the conduct or schedule of the project.

Quality assurance (QA) is an important component of EPA's work to assure that environmental information is appropriate for its intended use. Therefore, consistent with the agency's QA requirements, the contractor shall develop a project-specific QA project plan (PQAPP) as indicated in Section III below within 2 weeks of the task order award. If changes are deemed necessary by the EPA TOCOR, a revised PQAPP shall be submitted to the EPA TOCOR within 2 weeks of receiving comments from the EPA TOCOR. The project specific quality assurance requirements must be addressed in the monthly progress reports.

The contractor shall include in their monthly reports any adjustments to their quality assurance plan necessitated by unanticipated needs for specialized quality assurance measures.

Deliverables:

- 0.1 Initial conference call with the EPA TOCOR
- 0.2 PQAPP
- 0.3 Monthly Progress Reports

Task 1. Data Analysis and Evaluation for CCL 5 and continued for CCL 6- Amended to include referenced data sources submitted in Final SAB report.

The contractor shall support EPA's data analysis and evaluation of the SAB recommendations, public comments and other data analysis and manipulation requested by the EPA management. The contractor shall compile a summary (table or spreadsheets) of any new data sources submitted and/or referenced data sources with the SAB recommendation and/or public comments and compare this data to the data EPA has previously collected in the CCL 5 Universe to determine whether the data provided is new. If new data is submitted, the contractor shall evaluate and document whether the data meets the assessment factors (developed under CCL 5) to be considered in the CCL process (i.e., is the data relevant, is the data complete (including meeting quality requirements), is the data redundant with any other more comprehensive data sources), and is the data retrievable, and evaluate whether the data could be used for screening and scoring based on the data hierarchies developed under CCL 5. This is to ensure that the best available data is used in the CCL 5 development process. If a data source can be used in the CCL

5 process (based on the factors described above), at the written direction of the EPA TOCOR, the contractor shall extract available data elements in a simple Microsoft Excel spreadsheet. If needed, per technical direction, the contractor shall conduct statistical analyses on the new data provided (e.g., calculate mean, median, 90th percentile, and max concentrations) so that EPA can re-screen and/or re-score the contaminants and document any changes to the draft CCL 5.

If recommendations are made on the development of the Draft CCL 5, the contractor shall, at the direction of the EPA TOCOR, provide a spreadsheet(s) or other analyses (including those completed under sub-task 4.3) showing how those changes would impact the CCL 5 Universe, PCCL, and/or final CCL. The contractor shall also, at the written direction of the EPA TOCOR, provide written descriptions of how such changes would impact the CCL 5 process.

For referenced data sources that were submitted in the Final SAB report, Cadmus shall evaluate and document whether the referenced data sources meets the assessment factors to be considered in the CCL process (i.e., is the data relevant, is the data complete (including meeting quality requirements), is the data redundant with any other more comprehensive data sources), and is the data retrievable, and evaluate whether the data could be used for screening and scoring based on the data hierarchies developed under CCL 6. This is to ensure that the best available data is used in the CCL 6 development process. If a data source can be used in the CCL 6 process (based on the factors described above), at the written direction of the EPA TOCOR, the contractor shall extract available data elements in a simple Microsoft Excel spreadsheet. If needed, per technical direction, the contractor shall conduct statistical analyses on the new referenced data provided (e.g., calculate mean, median, 90th percentile, and max concentrations).

Deliverables:

- 1.1 Draft(s) of summary spreadsheet(s) of any data/data source submitted with the SAB recommendations and/or public comments.
- 1.2 Final summary spreadsheet of any data/data source submitted with the SAB recommendations and/or public comments.
- 1.3 Draft(s) of summaries of changes between the Draft CCL 5 Universe, PCCL, and CCL.
- 1.4 Final summary of changes between the Draft CCL 5 Universe, PCCL, and CCL.
- 1.5 Draft written description of CCL 5 impacts of suggested changes.
- 1.6 Final written description of CCL 5 impacts of suggested changes.
- 1.7 Draft summary spreadsheet of referenced data sources
- 1.8 Final summary spreadsheet of referenced data sources

Task 2. Support documents for Final CCL 5 publication

EPA is in the process of updating technical support documents for the Final CCL 5. The contractor shall provide support with formatting, drafting and revising tables, designing diagrams, figures, providing editorial review, etc., and ensuring that the support documents are 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials that will be provided to the contractor.

Upon written technical direction from the EPA TOCOR, the contractor shall edit support documents based on any changes made between the Draft CCL 5 and Final CCL 5 based on public, SAB, workgroup or management comments.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Final CCL 5 Technical Support Document and other support documents (CIS document, Response to Comments (RTC), response to the SAB report, etc.) for finalizing the CCL 5.

Deliverables:

- 2.1 Draft(s) of support documents for the Final CCL 5.
- 2.2 Final support documents for the Final CCL 5 (508 compliant).

Task 3. Meeting Support for SAB Panel Deliberations

The contractor shall attend up to two 5-hour meetings related to the CCL 5 process and the Draft CCL 5. The contractor shall provide for the taking of meeting notes and shall provide a copy of the draft summary of the meeting notes to the EPA TOCOR within 5 working days of the conclusion of the meeting. Per the EPA TOCOR technical direction, the contractor shall provide the final summary of the meeting notes.

Deliverables:

- 3.1 Draft summary of meeting notes.
- 3.2 Final summary of meeting notes.

Task 4. Review/Update Data Sources and Data Collection

Upon written technical direction from the EPA TOCOR, the contractor shall evaluate the data sources that have been updated since the CCL 5 data collection cut-off date and new potential data sources for use in CCL 6. The potential data sources shall include those that were not considered for CCL 3, CCL 4, or CCL 5 and that became available after the data collection cut-off date for CCL 5. During this evaluation, the contractor shall consider the assessment factors of relevance, completeness, redundancy, and retrievability as described in the Draft CCL 5 Technical Support Document. The contractor shall list and summarize the potential data sources in a Microsoft Excel file and update the data sources. The summaries shall identify new data sources, flag the data sources that need to be updated, and provide any other relevant information. Based upon written technical direction, the contractor shall collect data from a select number of new and/or updated data sources specified by the EPA TOCOR and provide summary spread sheets or documents for existing and potentially new data sources that may be deemed necessary per EPA TOCOR. At the direction of the EPA TOCOR, the contractor shall continue to update the Final CCL 5 data compilation for CCL 6. The data compilation shall meet OGWDW and EPA data warehouse standards.

Deliverables:

- 4.1 Draft lists and summaries of new data sources in Excel.

- 4.2 Final lists and summaries of new data sources in Excel.
- 4.3. Draft summaries of extracted and analyzed data in a table format
- 4.4. Final summaries of extracted and analyzed data in a table format

Task 5. Evaluation and Summaries of Nominated Contaminants

Upon written technical direction from the EPA TOCOR, the contractor shall identify and evaluate relevant data submitted during the CCL 6 public nominations process. The contractor shall provide summaries of the relevant data in a table format.

Deliverables:

- 5.1 Draft summaries of the relevant data in a table format
- 5.2 Final summaries of the relevant data in a table format.

Task 6: Continue revising and updating the quality assurance/quality control (QA/QC) reports for the CISs

Under WA 5-06 and TO 68HERC21F0119, Cadmus produced drafts of the CCL Data Management and QA/QC Report which detailed the data management and QA/QC processes used to produce the internal-use CISs and the Draft CCL 5 Chemical Contaminant Information Sheets Technical Support (aka external-facing CISs published with the Draft CCL 5). This task presents continuation of that work.

Upon written technical direction from the EPA TOCOR, Cadmus shall update the CCL Data Management and QA/QC Report, at a minimum, with the data management and QA/QC process conducted to produce the external-facing CISs for the Final CCL 5.

The report shall include a description of any QA/QC conducted on the data (i.e. input files) and manual QA/QC of the CISs. The report shall also include any description of the QA/QC process conducted on the code used to generate the simple files and populate the CISs. The report shall provide concepts and generalized processes for the different types of files mentioned above (i.e. simple input files, CIS, code for data files, and code for CISs).

Deliverables:

- 6.1 Draft(s) of the CCL Data Management and QA/QC Report
- 6.2 Final CCL Data Management and QA/QC Report

Amendment-Task 7: Continue writing a data management and QA/QC scoping document for CCL 6. Develop a scoping document/prioritization document post CCL 5, Pre-CCL 6 and continuing into the CCL 6 process using the Final SAB Report of Recommendations

Under TO 68HERC21F0119, Cadmus delivered a draft data management and QA/QC scoping document for CCL 6. Upon written technical direction from the EPA TOCOR, Cadmus shall update the draft data management and QA/QC scoping document for CCL 6 and produce a final data management and QA/QC scoping document for CCL 6. The plan shall include, but is not limited to, the following components and considerations: database design, data quality management, data acquisition and storage, data modeling, and metadata management.

CCL data (i.e. primary and supplemental data) is compiled at different phases of CCL development process, and used in different aspects of the CCL development process (e.g. screening code, generating the CISs, and classification models). At the direction of the TOCOR, the contractor shall include a schema within the data management scoping document that takes all CCL data-related needs into account. For example, a subset of data elements from all data associated with Universe chemicals is used in the screening code, whereas nearly all data elements associated with PCCL chemicals are used in classification and included on the CISs. If CCL data are moved to a relational database (e.g. MySQL or Microsoft Access), the database needs to be designed so that data can be queried or integrated for use in the screening code and for developing the CISs.

Additionally, at the direction of the EPA TOCOR, the data management plan and QA/QC scoping document shall include considerations for data accessibility that simplifies access to the data for EPA staff and the public. At the direction of the EPA TOCOR, the contractor shall consider alternative methods for the CIS, such as an online data dashboard (e.g. R Shiny or Qlik) or creating tables and forms in Microsoft Access.

Upon written technical direction from EPA TOCOR, Cadmus shall, evaluate and develop a CCL 5 scoping document to prioritize efficiently the recommendations in the SAB final report (which is currently scheduled to be published in August 2022). The scoping document should be organized by prioritizing which recommendations can efficiently and effectively be done post CCL 5 and prior to beginning CCL 6. Based on SAB's final report of written recommendations, other recommendations should be compiled and organized and describe which recommendations can be accomplished throughout different phases of the CCL 6 process.

Deliverables:

- 7.1 Draft(s) of Data Management and QA/QC scoping document.
- 7.2 Final Data Management and QA/QC scoping document.
- 7.3 Draft (s) of CCL 5/6 Scoping and Prioritization Document
- 7.4 Final CCL 5/6 Scoping and Prioritization Document

Task 8. Continue improving and refining existing data files and code

In preparation for CCL 6, the contractor shall continue to support EPA's efforts to improve and/or revise existing data files and code and document the changes and improvements.

Sub-task 8.1: Continue improving the CIS data files

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall iteratively:

1. Revise and/or update the new data file format (as needed).
2. Reduce the number of data source files and/or revise data source files used in the CISs (e.g., combine data files that contain redundant data or combine similar data into a single file).
3. Conduct quality assurance, make corrections, and/or updates, if necessary, to data that were provided by EPA or the data that were generated by the contractor, such as conduct quality assurance/quality control analysis on health and occurrence attribute scores and cross reference the scores to the attribute scoring protocols, etc.
4. Document the changes and improvements to the CIS files, quality assurance activities, results and remediation steps of the QA/QC in a CCL 5 Data Improvement report, etc.

Improving the CIS data files will be an iterative process. Therefore, the contractor shall write and provide draft versions of the CCL 5 Data Improvement report, and revise/update it, as the contractor makes additional revisions/corrections to the CIS data files, as directed by the EPA TOCOR. EPA expects that improving the CIS data files will consist of approximately 5 iterations. Upon completion of CIS data files improvements, the contractor shall finalize the CCL 5 Data Improvement report, as directed by the EPA TOCOR.

Deliverables:

- 8.1.1 Revised and/or corrected data source files.
- 8.1.2 Iterative draft versions of the CCL 5 Data Improvement report.
- 8.1.3 Draft(s) of the CCL 5 Data Improvement report.
- 8.1.4 Final CCL 5 Data Improvement report.

Sub-task 8.2: Continue improving screening files

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall:

1. Conduct quality assurance activities on existing data files used in the screening step. Quality assurance activities may include, but are not limited to, checking inconsistencies between primary data source files used in screening vs classification and/or checking and correcting DTXSIDs.
2. Acquire and/or conduct analyses on the data (e.g., download data and calculate summary statistics).
3. Transform the data into the “simple file” format.
4. Document the results of the above analyses and quality assurance activities in report documents (spreadsheets and/or Word documents).

For example: EPA needs to identify existing errors in DTXSID assignments to contaminants in the Pre-Universe and/or Universe files used for screening. Cadmus shall conduct QA/QC on screening files to identify any errors and make corrections. Cadmus shall document QA/QC activities, the findings, and corrections made in a summary document.

Deliverables:

8.2.1 Updated and/or revised data files.

8.2.2 Documents detailing the analyses and quality assurance activities.

Sub-task 8.3: Continue operating the screening code and conducting analysis of output

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall revise, update, and/or run the code EPA developed to generate the PCCL 5. This code is hereafter referred to as “screening code” and is further described in the numbered list below. Per technical direction, using the screening code, the contractor shall generate input and output files, and analyze and document how contaminants are screened. The contractor shall revise, update, and/or run the screening code to prepare for the Final CCL 5 and for CCL 6.

EPA expects that the contractor will operate the screening code, make revisions and/or updates, and analyze the output approximately 6 times to prepare for the Final CCL 5. EPA expects that the contractor will operate the screening code, make revisions, and/or updates and analyze the output approximately 8 times for CCL 6.

The screening code, documented in R Markdown, consists of four primary components:

1. “Pre-processing” primary data sources: A series of individual R Markdown documents dedicated to pre-processing a primary data source. The pre-processing scripts extract and transform data elements relevant to screening into a simple file format. The outputs of the pre-processing scripts are simple data files associated with each primary data source.
2. “Making the Pre-Universe”: This R Markdown document aggregates the simple data files produced from the pre-processing code into the pre-universe file.
3. “ID and Screen”: This R Markdown document contains manual corrections to DTXSIDs, assigns unique internal-use NO_DTXSID identifiers to contaminants without existing DTXSIDs, and adds data from the CompTox Chemicals Dashboard. The input file is the pre-universe file and the output of this code is the universe file.
4. “Screening”: This R Markdown document uses the data in the universe file, establishes the screening point hierarchy using statistical methods (quantiles and summary statistics), assigns screening points according to the screening point assignment hierarchy, and calculates the screening score for each contaminant in the universe. The outputs of this code are the Scored Universe file and PCCL file.

Additionally, upon written technical direction from the EPA TOCOR, the contractor shall develop a method for version control and file sharing to manage and track changes to the screening code to facilitate collaboration with EPA (e.g., screening code is managed on a Git repository that EPA and the contractor can easily access).

Furthermore, the contractor shall conduct and document QA/QC activities while operating, revising, and updating the screening code and conducting analyses, as directed by the EPA TOCOR. QA/QC activities may include, but are not limited to, code reviews after changes are made, checking that screening points are assigned to data elements correctly, checking unit

conversions, calculating the screening scores of a random sample of chemicals in the Scored Universe file to confirm the expected screening score.

The contractor shall document the QA/QC activities and analyses in a summary document and/or spreadsheet.

Example 1: EPA needs to include new or revised data (e.g. finalized UCMR 4 data) into the screening code or changes how a data element is assigned screening points (e.g. change a non-national representative water study to a nationally-representative water study). This type of change involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code, update the code, and generate output files for EPA. The contractor shall conduct an analysis that compares the draft PCCL 5 to the updated PCCL and generate an updated screening point hierarchy. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Example 2: EPA needs to test out a new screening point hierarchy, incorporate new CCL 6 data sources, and obtain a new Scored Universe file for CCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output files for EPA. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Deliverables:

- 8.3.1 Screening code input and output files.
- 8.3.2 Screening code output analyses summary documents.
- 8.3.3 Screening code with documented changes on a code repository site.
- 8.3.4 Documents containing the analyses and quality assurance activities.

Option year 1 (March 1, 2023 – February 29, 2024)

Task 9: Continue operating the screening code and conducting analysis of output

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall revise, update, and/or run the code EPA developed to generate the PCCL 5. This code is hereafter referred to as “screening code” and further described in the numbered list below. Per technical direction, using the screening code, the contractor shall generate input and output files, and analyze and document how contaminants are screened. The contractor shall revise, update, and/or run the screening code for CCL 6 and to generate the PCCL 6.

EPA expects that the contractor will operate the screening code, make revisions, and/or updates and analyze the output approximately 4 times for CCL 6.

The screening code, documented in R Markdown, consists of four primary components:

1. “Pre-processing” primary data sources: A series of individual R Markdown documents dedicated to pre-processing a primary data source. The pre-processing scripts extract and transforms data elements relevant to screening into a simple file format. The outputs of the pre-processing scripts are simple data files associated with each primary data source.
2. “Making the Pre-Universe”: This R Markdown document aggregates the simple data files produced from the pre-processing code into the pre-universe file.
3. “ID and Screen”: This R Markdown document contains manual corrections to DTXSIDs, assigns unique internal-use NO_DTXSID identifiers to contaminants without existing DTXSIDs, and adds data from the CompTox Chemicals Dashboard. The input file is the pre-universe file and the output of this code is the universe file.
4. “Screening”: This R Markdown document uses the data in the universe file, establishes the screening point hierarchy using statistical methods (quantiles and summary statistics), assigns screening points according to the screening point assignment hierarchy, and calculates the screening score for each compound in the universe. The outputs of this code are the Scored Universe file and PCCL file.

Additionally, upon written technical direction from the EPA TOCOR, the contractor shall develop a method for version control and file sharing to manage and track changes to the screening code to facilitate collaboration with EPA (e.g., screening code is managed on a Git repository that EPA and the contractor can easily access).

Furthermore, the contractor shall conduct and document QA/QC activities while operating, revising, and updating the screening code and conducting analyses, as directed by the EPA TOCOR. QA/QC activities may include, but are not limited to, code reviews after changes are made, checking that screening points are assigned to data elements correctly, checking unit conversions, calculating the screening scores of a random sample of chemicals in the Scored Universe file to confirm the expected screening score.

The contractor shall document the QA/QC activities and analyses in a summary document and/or spreadsheet.

For example: EPA needs to update the screening point hierarchy, incorporate several new primary data sources into the screening step, and obtain the PCCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output files for EPA. The contractor shall document the analyses and results, and QA/QC activities in a summary document.

Deliverables:

- 9.1 Screening code input and output files.
- 9.2 Screening code output analyses summary documents.
- 9.3 Screening code with documented changes on a code repository site.
- 9.4 Documents containing the analyses and QA/QC activities.

Task 10. Calculate Final Hazard Quotients and Attribute scores

Per technical direction from the EPA TOCOR, the contractor shall identify data and derive and select the final Hazard Quotients (fHQs) and final prevalence and magnitude attribute scores for up to 600 chemical contaminants.

Deliverables:

- 10.1 Draft values for attribute scores and fHQs.
- 10.2 Final values for attribute scores and fHQs.

Task 11. Literature Review

Similar to CCL 5, EPA will be screening the Universe of contaminants for CCL 6 down to a Preliminary CCL (PCCL) using available occurrence and health effects data in the compiled contaminant prioritization data set. To evaluate the PCCL, and narrow it down to a draft CCL, a literature search will be conducted to identify supplemental occurrence data which would not have been included in the Universe because the data did not meet the requirements of a primary data source used to develop the Universe. Per technical direction from the EPA TOCOR, the contractor shall conduct a systematic literature search and review for occurrence data for up to 300 PCCL contaminants. It is assumed that the contaminants are data rich. This will help to ensure that the best available data is being used in the CCL classification step.

Deliverables:

- 11.1 Draft results of occurrence literature search.
- 11.2 Final results of occurrence literature search.

Task 12. Support documents for Draft CCL 6 publication

Per technical direction from the EPA TOCOR, the contractor shall support the drafting and revising of the technical support documents for the draft CCL 6. This includes support with drafting and revising chapters, formatting, drafting and revising tables, designing diagrams, figures, providing editorial review etc., and making support documents 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials that will be provided to the contractor.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Draft CCL 6 Technical Support Document and other support documents (CIS document, RTC, response to the SAB report, etc.) for finalizing the CCL 5.

For the CIS technical support document, the process is assumed to be similar to the Draft CCL 5, but more efficient as a result of the improvements made in Task Order # 68HERC21F0119.

Deliverables:

- 12.1 Draft(s) of support documents for the Draft CCL 6.

12.2 Final support documents for the Draft CCL 6 (508 compliant).

Option Year 2 (March 1, 2024 – February 28, 2025)

Task 13. Support documents for Final CCL 6 publication

Per technical direction from the EPA TOCOR, the contractor shall support the drafting and revising of the technical support documents for the draft CCL 6. This includes support with drafting and revising chapters, formatting, drafting and revising tables, designing diagrams, figures, providing editorial review etc., and making support documents 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials.

Based on written technical direction from the EPA TOCOR, the contractor shall edit support documents based on any changes made between the Draft CCL 5 and Final CCL 5 based on public, SAB, workgroup or management comments.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Final CCL Technical Support Document and other support documents (CIS document, RTC, response to the SAB report, etc.) for finalizing the CCL 5.

Deliverables:

13.1 Draft(s) of support documents for the Final CCL 6.

13.2 Final support documents for the Final CCL 6 (508 compliant).

III. QUALITY ASSURANCE REQUIREMENTS

The tasks in this task order require the use of primary and/or secondary data. Therefore, consistent with the Agency's quality assurance (QA) requirements, the contractor shall develop a project-specific quality assurance project plan (PQAPP), to ensure that data of sound quality is used to complete these tasks. In addition, throughout the course of this task order, if it is determined that the PQAPP requires any revision, the contractor shall provide the necessary changes to the EPA TOCOR.

IV. SCHEDULE OF DELIVERABLES

The contractor shall send EPA all deliverables in accordance with the terms of the contract.

All reports shall be provided first in draft form. Upon receipt of comments from the EPA TOCOR, the contractor shall revise the deliverable and distribute final copies as stated in the Performance Work Statement.

Tasks	Item	Due	Method of Delivery
Task 0. Task Order Administration			
0.1	Initial Conference Call with TOCOR	Within 10 days of the TO award	Conference Call
0.2	PQAPP	Within 2 weeks of the TO award	Electronic
0.3	Monthly Progress Reports	Monthly	Electronic
Task 2: Data Analysis and Evaluations			
1.1	Draft(s) of summary spreadsheet(s) of any data/data source submitted with the SAB recommendations and/or public comments.	Per technical direction	Electronic
1.2	Final summary spreadsheet of any data/data source submitted with the SAB recommendations and/or public comments.	Per technical direction	Electronic
1.3	Draft(s) of summaries of changes between the Draft CCL 5 Universe, PCCL, and CCL.	Per technical direction	Electronic
1.4	Final summary of changes between the Draft CCL 5 Universe, PCCL, and CCL.	Per technical direction	Electronic
1.5	Draft written description of CCL 5 impacts of suggested changes.	Per technical direction	Electronic
1.6	Final written description of CCL 5 impacts of suggested changes.	Per technical direction	Electronic
1.7	Draft summary spreadsheet of referenced data sources	Per technical direction	Electronic
1.8	Final summary spreadsheet of referenced data sources	Per technical direction	Electronic

Task 2. Finalize support documents for draft CCL 5 publication			
2.1	Draft(s) of support documents for the final CCL 5.	Per technical direction	Electronic
2.2	Final support documents for the final CCL 5 (508 compliant).	Per technical direction	Electronic
Task 3. Meeting Support for the CCL			
3.1	Draft meeting notes	5 days after the meeting	Electronic
3.2	Final meeting notes	Per technical direction	Electronic
Task 4. Review and Update Data Sources			
4.1	Draft lists and summaries of new data sources in Excel.	Per technical direction	Electronic
4.2	Final lists and summaries of new data sources in Excel.	Per technical direction	Electronic
4.3	Draft summaries of extracted and analyzed data in a table format.	Per technical direction	Electronic
4.4.	Final summaries of extracted and analyzed data in a table format.	Per technical direction	Electronic
Task 5. Evaluation and Summaries of Nominated			
5.1	Draft summaries of the relevant data in a table format.	Per technical direction	Electronic
5.2	Final summaries of the relevant data in a table format.	Per technical direction	Electronic
Task 6: Continue revising and updating the QA/QC reports for the CISs			
6.1	Draft(s) of the CCL Data Management and QA/QC Report	Per technical direction	Electronic
6.2	Final CCL Data Management and QA/QC Report	Per technical direction	Electronic
Task 7: Continue writing the data management and QA/QC scoping document for CCL 6			
7.1	Draft(s) of Data Management and	Per technical direction	Electronic

	QA/QC scoping document.		
7.2	Final Data Management and QA/QC scoping document.	Per technical direction	Electronic
7.3	Draft (s) of CCL 5/6 Scoping and Prioritization Document	Per Technical Direction	Electronic
7.4	Final of CCL 5/6 Scoping and Prioritization Document	Per Technical Direction	Electronic
Task 8. Continue improving and refining existing data files and code			
Sub-task 8.1: Continue improving the CIS data			
8.1.1	Revised and/or corrected data source files.	Per technical direction	Electronic
8.1.2	Iterative draft versions of the CCL 5 Data Improvement report.	Per technical direction	Electronic
8.1.3	Draft(s) of the CCL 5 Data Improvement report.	Per technical direction	Electronic
8.1.4	Final CCL 5 Data Improvement report.	Per technical direction	Electronic
Sub-task 8.2: Continue improving screening files			
8.2.1	Updated and/or revised data files.	Per technical direction	Electronic
8.2.2	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Sub-task 8.3: Continue operating the screening code and conducting analysis of output			
8.3.1	Screening code input and output files.	Per technical direction	Electronic
8.3.2	Screening code output analyses summary documents.	Per technical direction	Electronic
8.3.3	Screening code with documented changes on a code repository site.	Per technical direction	Electronic
8.3.4	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Task 9: Continue operating the screening code and conducting analysis of output			

9.1	Screening code input and output files.	Per technical direction	Electronic
9.2	Screening code output analyses summary documents.	Per technical direction	Electronic
9.3	Screening code with documented changes on a code repository site.	Per technical direction	Electronic
9.4	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Task 10. Calculate Final Hazard Quotients and Attribute scores			
10.1	Draft values for attribute scores and fHQs.	Per technical direction	Electronic
10.2	Final values for attribute scores and fHQs.	Per technical direction	Electronic
Task 11. Literature Review			
11.1	Draft results of occurrence literature search.	Per technical direction	Electronic
11.2	Final results of occurrence literature search.	Per technical direction	Electronic
Task 12. Support documents for Draft CCL 6 publication			
12.1	Draft(s) of supporting documents for the Draft CCL 6.	Per technical direction	Electronic
12.2	Final supporting documents for the Draft CCL 6 (508 compliant).	Per technical direction	Electronic
Task 13. Support documents for Final CCL 6 publication			
13.1	Draft(s) of support documents for the Final CCL 6.	Per technical direction	Electronic
13.2	Final support documents for the Final CCL 6 (508 compliant).	Per technical direction	Electronic

V. PERFORMANCE STANDARDS AND MEASURES

The following standards will be used to measure performance.

1. Quality of Products: All tasks are to be of superior quality. The quality of outputs will be measured against similar analyses and work already performed by EPA.
2. Schedule: All tasks are to be completed on, or ahead of schedule as measured against the acceptance criteria.
3. Ingenuity and Resourcefulness: New issues are addressed using innovative analyses. Ingenuity and resourcefulness will be measured by the ability to use innovative analyses to address new issues not previously identified.
4. Quality assurance: Adhere to both Contract level QAPP and PQAPP.

VI. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the agency's official representative. The contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the CO, CL-COR and/or TOCOR.

VII. STATUS NOTIFICATION

The contractor shall notify the EPA PO and program office contact when 75% of the funds provided have been expended or when funding for less than 6 weeks work remains. The contractor shall also notify the TOCOR when 75% of the funds have been used on any single case assignment. Notifications shall be in writing and cc'd to the Project Officer.

SECTION B - Supplies or Services/Prices

B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION

(a) Severable services may be incrementally funded. Non-severable services shall not be incrementally funded. Contract line item 0001 is severable and may be incrementally funded. For this item, the sum of **\$187,977.00** of the total price is presently available for payment and allotted to this item. Contract line items 0002 and 0003 are issued on a Firm-Fixed-Price basis and are fully funded.

(b) For items identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those items for the Government's convenience, approximates the total amount currently allotted for those items to the contract. The Contractor shall not continue work on those items beyond that point. Subject to the clause entitled "Termination for Convenience of the Government," the Government will not be obligated, under any circumstances, to reimburse the Contractor in excess of the amount payable by the Government in the event of the termination of applicable contract line items for convenience including costs, profit, and estimated termination costs for those line items.

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (h) of this clause, the Contractor will notify the Contracting Officer, in writing, at least 10 days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount currently allotted to the contract for performance of the applicable items. The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the applicable line items up to the next scheduled date for the allotment of funds identified in paragraph (a) of this clause, or to a substitute date as determined by the Government pursuant to paragraph (d) of this clause. If, after such notification, additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause entitled "Termination for Convenience of the Government."

(d) The parties contemplate that, subject to the availability of appropriations, the Government may allot additional funds for continued performance of the contract line items identified in paragraph (a) of this clause and will determine the estimated period of contract performance which will be covered by the funds. If additional funds are allotted, the Contracting Officer will notify the Contractor in writing. The Contractor shall not resume performance of the contract line items identified in paragraph (a) until the written notice is received. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and to the new estimated period of contract performance. The contract will be modified accordingly.

(e) The Government may, at any time prior to termination, allot additional funds for the performance of the contract line items identified in paragraph (a) of this clause.

(f) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default". The provisions of this clause are limited to the work and allotment of funds for the contract line items set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded.

(g) Nothing in this clause affects the right of the Government to otherwise terminate this contract pursuant to the contract clause entitled "Termination for Convenience of the Government".

(h) The parties contemplate that the Government may obligate funds to this contract in accordance with the following schedule:

RECAPITULATION OF FUNDING TO DATE – LINE ITEM 0001
CONTRACT NO. 68HERC21D0006
TASK ORDER NO. 68HERC22F0099

Period of Performance - FROM 03/01/2022 through 02/28/2023

Funding Action	Funding
Initial Award Line Item 0001 Amount	\$168,009.00
Initial Incremental Funding	161,005.00
Amended Line Item 001 Amount (P00002)	\$187,977.00
Incremental Funding via PR-OW-22-00803 (P00002)	\$26,972.00
Unfunded amount	-\$0-

SECTION F - Deliveries or Performance

F-1 Local Clauses EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this Task Order period (Base Period) shall be from 03/01/2022 through 02/28/2023 inclusive of all required reports.

Option Period 1, if exercised, shall have a period of performance from 03/01/2023 through 02/29/2024 inclusive of all required reports.

Option Period 2, if exercised, shall have a period of performance from 03/01/2024 through 02/28/2025 inclusive of all required reports.

SECTION G - Contract Administration Data

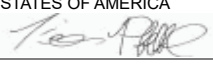
G-1 Local Clauses EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Lameka Smith, 202-564-1629, smith.lameka@epa.gov (TOCOR)
Kesha Forrest, 202-564-3632, forrest.kesha@epa.gov (Alternate TOCOR)

Contracting Officials responsible for administering this contract are as follows:

Keith Pfeffer, 513-487-2034, pfeffer.keith@epa.gov (Contracting Officer)
John Krauss, 513-487-2148, krauss.john@epa.gov (Contract Specialist)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES		
					14		
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
P00003		See Block 16C		See Schedule			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
CAD							
US Environmental Protection Agency							
26 West Martin Luther King Drive							
Mail Code: W136							
Cincinnati OH 45268-0001							
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(x) 9A. AMENDMENT OF SOLICITATION NO.			
Cadmus Group LLC, The							
Attn: JOEL DEMASI				9B. DATED (SEE ITEM 11)			
100 5TH AVENUE							
SUITE 100							
WALTHAM MA 024518727				x 10A. MODIFICATION OF CONTRACT/ORDER NO.			
				68HERC21D0006			
				68HERC22F0099			
				10B. DATED (SEE ITEM 13)			
				02/08/2022			
CODE		WSEZME8NNBA8		FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.							
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
See Schedule							
Net Increase: \$145,000.00							
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
CHECK ONE							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
X B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION							
E. IMPORTANT: Contractor <input checked="" type="checkbox"/> is not <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
UEI: WSEZME8NNBA8							
TOCOR: Lameka Smith Max Expire Date: 02/28/2025 Invoice Approver: Lameka Smith Alt Invoice							
App: Kesha Forrest							
The purposes of this modification are to:							
1) Exercise Option Period 1 (Item 0004), which is a severable services line item with a Time-and-Materials ceiling value of \$32,926.00;							
2) Add incremental funding in the total Time-and-Materials amount of \$27,000.00 to Line Item 0004 (Option Period 1);							
3) Exercise Option Period 1 (Item 0005), which is a Firm-Fixed-Price line item with a value of \$15,000.00;							
Continued ...							
Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				Keith Pfeffer			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
(Signature of person authorized to sign)				 (Signature of Contracting Officer)		01/17/2023	

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED 68HERC21D0006/68HERC22F0099/P00003	PAGE	OF
		2	4

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>4) Fully fund Item 0005 in the amount of \$15,000.00;</p> <p>5) Exercise Option Period 1 (Item 0006), which is a Firm-Fixed-Price line item with a value of \$18,000.00;</p> <p>6) Fully fund Item 0006 in the amount of \$18,000.00;</p> <p>7) Exercise Option Period 1 (Item 0007), which is a Firm-Fixed-Price line item with a value of \$85,000.00; and</p> <p>8) Fully fund Item 0007 in the amount of \$85,000.00.</p> <p>Please see the below and the attached Funding Recap for accounting details.</p> <p>LIST OF CHANGES:</p> <p>Obligated Amount for this Modification: \$145,000.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 4</p> <p>Obligated Amount for this Modification: \$27,000.00</p> <p>Exercised option</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code: 23-24-B-40DS1-000B53-2505-2340SRE009-001</p> <p>Beginning FiscalYear 23</p> <p>Ending Fiscal Year 24</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 40DS1</p> <p>Program (PRC) 000B53</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 2340SRE009-001</p> <p>Quantity: 0</p> <p>Amount: \$27,000.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 5</p> <p>Obligated Amount for this Modification: \$15,000.00</p> <p>Exercised option</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code: 23-24-B-40DS1-000B53-2505-2340SRE010-001</p> <p>Beginning FiscalYear 23</p> <p>Ending Fiscal Year 24</p> <p>Fund (Appropriation) B</p> <p>Continued ...</p>				

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	68HERC21D0006/68HERC22F0099/P00003	3	4

NAME OF OFFEROR OR CONTRACTOR

Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Budget Organization 40DS1 Program (PRC) 000B53 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 2340SRE010-001 Quantity: 0 Amount: \$15,000.00 CHANGES FOR LINE ITEM NUMBER: 6 Obligated Amount for this Modification: \$18,000.00 Exercised option NEW ACCOUNTING CODE ADDED: Account code: 23-24-B-40DS1-000B53-2505-2340SRE010-001 Beginning FiscalYear 23 Ending Fiscal Year 24 Fund (Appropriation) B Budget Organization 40DS1 Program (PRC) 000B53 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 2340SRE010-001 Quantity: 0 Amount: \$18,000.00 CHANGES FOR LINE ITEM NUMBER: 7 Obligated Amount for this Modification: \$85,000.00 Exercised option NEW ACCOUNTING CODE ADDED: Account code: 23-24-B-40DS1-000B53-2505-2340SRE010-001 Beginning FiscalYear 23 Ending Fiscal Year 24 Fund (Appropriation) B Budget Organization 40DS1 Program (PRC) 000B53 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 2340SRE010-001 Quantity: 0 Amount: \$85,000.00 Continued ...				

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 03/01/2022 to 02/28/2025				

SECTION B - Supplies or Services/Prices

B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION

(a) Severable services may be incrementally funded. Non-severable services shall not be incrementally funded. Contract line item 0004 is severable and may be incrementally funded. For this item, the sum of **\$27,000.00** of the total price is presently available for payment and allotted to this item. Contract line items 0005, 0006, and 0007 are issued on a Firm-Fixed-Price basis and are fully funded.

(b) For items identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those items for the Government's convenience, approximates the total amount currently allotted for those items to the contract. The Contractor shall not continue work on those items beyond that point. Subject to the clause entitled "Termination for Convenience of the Government," the Government will not be obligated, under any circumstances, to reimburse the Contractor in excess of the amount payable by the Government in the event of the termination of applicable contract line items for convenience including costs, profit, and estimated termination costs for those line items.

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (h) of this clause, the Contractor will notify the Contracting Officer, in writing, at least 10 days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount currently allotted to the contract for performance of the applicable items. The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the applicable line items up to the next scheduled date for the allotment of funds identified in paragraph (a) of this clause, or to a substitute date as determined by the Government pursuant to paragraph (d) of this clause. If, after such notification, additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause entitled "Termination for Convenience of the Government."

(d) The parties contemplate that, subject to the availability of appropriations, the Government may allot additional funds for continued performance of the contract line items identified in paragraph (a) of this clause and will determine the estimated period of contract performance which will be covered by the funds. If additional funds are allotted, the Contracting Officer will notify the Contractor in writing. The Contractor shall not resume performance of the contract line items identified in paragraph (a) until the written notice is received. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and to the new estimated period of contract performance. The contract will be modified accordingly.

(e) The Government may, at any time prior to termination, allot additional funds for the performance of the contract line items identified in paragraph (a) of this clause.

(f) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default". The provisions of this clause are limited to the work and allotment of funds for the contract line items set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded.

(g) Nothing in this clause affects the right of the Government to otherwise terminate this contract pursuant to the contract clause entitled "Termination for Convenience of the Government".

(h) The parties contemplate that the Government may obligate funds to this contract in accordance with the following schedule:

RECAPITULATION OF FUNDING TO DATE – LINE ITEM 0004
CONTRACT NO. 68HERC21D0006
TASK ORDER NO. 68HERC22F0099

Period of Performance - FROM 03/01/2023 through 02/29/2024

Line Item 0004 Amount	\$32,926.00
Funding Action	
Incremental Funding (P00003)	\$27,000.00
Unfunded amount	-\$5,926.00

SECTION F - Deliveries or Performance

F-1 Local Clauses EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this Task Order period (Base Period) shall be from 03/01/2022 through 02/28/2023, inclusive of all required reports.

Option Period 1 shall have a period of performance from 03/01/2023 through 02/29/2024, inclusive of all required reports.

Option Period 2, if exercised, shall have a period of performance from 03/01/2024 through 02/28/2025, inclusive of all required reports.

SECTION G - Contract Administration Data

G-1 Local Clauses EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Lameka Smith, 202-564-1629, smith.lameka@epa.gov	(TOCOR)
Kesha Forrest, 202-564-3632, forrest.kesha@epa.gov	(Alternate TOCOR)
Nicole Tucker 202-564-1946, tucker.nicole@epa.gov	(Alternate TOCOR)

Contracting Officials responsible for administering this contract are as follows:

Keith Pfeffer, 513-487-2034, pfeffer.keith@epa.gov	(Contracting Officer)
John Krauss, 513-487-2148, krauss.john@epa.gov	(Contract Specialist)

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED 68HERC21D0006/68HERC22F0099/P00004	PAGE	OF
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NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>amount of \$91,772.00 for a new total T&M ceiling value of \$124,698.00;</p> <p>5. Decrease the Option Period 1 (exercised) FFP line item 0006 price by \$9,500.00 and de-obligate \$9,500.00 from FFP line item 0006;</p> <p>6. Decrease the Option Period 1 (exercised) FFP line item 0007 price by \$80,000.00 and de-obligate \$80,000.00 from FFP line item 0007;</p> <p>7. Increase the Option Period 2 (unexercised) T&M line item 0008 price in the amount of \$51,564.00 to a new total T&M ceiling value of \$63,146.00; and</p> <p>8. Increase the Option Period 2 (unexercised) FFP line item 0009 price by \$10,000.00 to a new total price of \$45,000.00.</p> <p>LIST OF CHANGES:</p> <p>Obligated Amount for this Modification: -\$89,500.00</p> <p>TOCOR (Task Order Contracting Officer's Representative) changed to: Nicole Tucker Invoice Approving Official changed to : Nicole Tucker</p> <p>CHANGES FOR LINE ITEM NUMBER: 4</p> <p>Total Amount changed from \$32,926.00 to \$124,698.00</p> <p>CHANGES FOR DELIVERY LOCATION: OW/OGWDW/SRMD Amount changed from \$32,926.00 to \$124,698.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 6</p> <p>Total Amount changed from \$18,000.00 to \$8,500.00 Obligated Amount for this Modification: -\$9,500.00</p> <p>CHANGES FOR DELIVERY LOCATION: OW/OGWDW/SRMD Amount changed from \$18,000.00 to \$8,500.00</p> <p>CHANGES FOR ACCOUNTING CODE: 23-24-B-40DS1-000B53-2505-2340SRE010-001 Amount changed from \$18,000.00 to \$8,500.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 7</p> <p>Total Amount changed from \$85,000.00 to \$5,000.00 Obligated Amount for this Modification: Continued ...</p>				

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED 68HERC21D0006/68HERC22F0099/P00004	PAGE	OF
		3	4

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	-\$80,000.00 CHANGES FOR DELIVERY LOCATION: OW/OGWDW/SRMD Amount changed from \$85,000.00 to \$5,000.00 CHANGES FOR ACCOUNTING CODE: 23-24-B-40DS1-000B53-2505-2340SRE010-001 Amount changed from \$85,000.00 to \$5,000.00 CHANGES FOR LINE ITEM NUMBER: 8 Total Amount changed from \$11,582.00 to \$63,146.00 CHANGES FOR DELIVERY LOCATION: OW/OGWDW/SRMD Amount changed from \$11,582.00 to \$63,146.00 CHANGES FOR LINE ITEM NUMBER: 9 Total Amount changed from \$35,000.00 to \$45,000.00 CHANGES FOR DELIVERY LOCATION: OW/OGWDW/SRMD Amount changed from \$35,000.00 to \$45,000.00 Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 03/01/2022 to 02/28/2025				
0010	Option Period 2 - PWS Task 11. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. (Option Line Item) 01/11/2024 Product/Service Code: R499				76,500.00
0011	Option Period 2 - PWS Task 12. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. Continued ...				45,000.00

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0012	(Option Line Item) 01/11/2024 Product/Service Code: R499 Option Period 2 - PWS Task 16. FFP item for Continued Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6 Chemical Selection. (Option Line Item) 01/11/2024 Product/Service Code: R499				14,000.00

PERFORMANCE WORK STATEMENT
Contract 68HERC21D0006
Task Order # 68HERC22F0099- AMENDMENT 2

**TITLE: Support for the Contaminant Candidate List 5 and Contaminant Candidate List 6
Chemical and Microbial Selection**

PERIOD OF PERFORMANCE:

Base Year: 03/01/2022 – 02/28/2023

Option Year 1: 03/01/2023 – 02/29/2024

Option Year 2: 03/01/2024 – 02/28/2025

EPA CONTACTS

TASK ORDER COR:

Nicole Tucker
Office Of Ground Water and Drinking Water
(OGWDW)
1200 Pennsylvania Avenue, NW
(MC: 4607M)
Washington, DC 20460
202-564-1946
Tucker.nicole@epa.gov

ALTERNATE TASK ORDER CORs:

Kesha Forrest
Office of Ground Water and Drinking
Water (OGWDW)
1200 Pennsylvania Avenue, NW
(MC: 4607M)
Washington, DC 20460
202-564-3632
forrest.kesha@epa.gov

Thomas Lombardi
Office of Ground Water and Drinking
Water (OGWDW)
1200 Pennsylvania Avenue, NW
(MC: 4607M)
Washington, DC 20460
202-564-7653
lombardi.thomas@epa.gov

I. BACKGROUND

The Safe Drinking Water Act (SDWA) as amended in 1996 requires EPA to publish a list of contaminants that are known or anticipated to occur in public water systems, and which may require regulation under the SDWA known as the Drinking Water Contaminant Candidate List,

or CCL. (Section 1412(b)(1)). In developing the CCL, SDWA specifies that EPA consult with the scientific community including the Science Advisory Board (SAB).

EPA published the final CCL 4 in the Federal Register on November 17, 2016. CCL 4 was a carryover from CCL 3, with the following exceptions: 6 contaminants that were removed due to final or pending regulatory determinations (perchlorate; 1, 3-dinitrobenzene; dimethoate; terbufos; terbufos sulfone; and strontium), two contaminants that were added because of the public nominations process (manganese and nonylphenol), and 3 canceled pesticides that were removed based on public comment (fenamiphos, molinate, and disulfoton).

In developing CCL 3, EPA implemented an improved process from what was used for previous CCLs. The CCL 3 process was based on substantial expert input and recommendations from the National Academy of Science's National Research Council (NRC) and National Drinking Water Advisory Council (NDWAC). EPA used a multi-step process to identify contaminants for inclusion on the CCL 3. The first step involved identifying a broad universe of approximately 7,500 potential drinking water contaminants. The agency then applied screening criteria to identify a preliminary CCL (PCCL) of approximately 600 contaminants based on their potential to occur in public water systems and the potential for public health concern. These chemicals were then further evaluated using a classification approach and expert judgment to identify the CCL 3. For CCL 5, EPA is using the same overall framework of CCL 3 with modifications to further improve and streamline the process.

The Draft CCL 5 was published in July 2021 for public comment. The list includes a total of 81 contaminants or groups, including 66 chemicals and 3 chemical groups, and 12 microbes.

As part of the CCL process, on October 5, 2018, EPA requested public nominations of contaminants to be considered for CCL 5. EPA also requested supporting information that shows the nominated contaminant may have an adverse health effect on people and that it occurs or is likely to occur in public water systems.

Under this task order, the agency is responding to public comments and SAB recommendations for CCL 5, analyzing the data provided in the public comments and SAB recommendations, improving and refining existing data files, and updating and finalizing technical support documents.

Additionally, under this task order, EPA is also conducting activities to develop CCL 6. Therefore, the agency would like to undertake a hybrid approach of using time and materials and firm fixed price to complete the tasks listed below. A hybrid time and materials and firm fixed price approach is the most appropriate task order type for the requirements of this Task Order.

The scope and size of Task 1, Task 4, and Task 5 depend on the number of recommendations that EPA receives as part of the SAB consultation and public nominations, respectively. Therefore, the most appropriate type of task order for this task is time and material.

Similarly, the requirements for Task 6, Task 7, Task 8, ~~and Task 9~~, and Task 14 are dependent on the number of changes and revisions identified in the quality assurance (QA) process, outcomes of future management decisions, and/or SAB recommendations. Therefore, the most appropriate type of task order for this task is time and material.

This task order has been structured to minimize the use of time and material requirements. This has been accomplished by establishing a firm fixed price for Task 2, Task 3, Task 10, Task 11, Task 12 and Task 13.

In addition to the changes that were submitted for this amendment in December 2022, this revision (v3.21) will also include changes that will:

- Add a new deliverable “11.1.0” to Option Year 1
- Move Tasks 11.1.1, 11.1.2 and 11.1.3 from Option year 1 to Option year 2
- Task 15 was added in Option Year 2 for the support of the chemical evaluation process.
- Task 16 was added to Option Year 2 to support CCL 6 work group meetings.

II. TASKS

Base Year (March 1, 2022 – February 28, 2023)

Task 0. Task Order Administration

Within ten (10) days of task order award, the contractor shall schedule a conference call with the EPA TOCOR to clarify outstanding questions and confirm the schedule and specific tasks.

The contractor shall provide status updates to the EPA TOCOR by conference call periodically (approximately biweekly or more frequently as necessary) to discuss progress, challenges, and decisions regarding next steps. The contractor shall initiate additional communication with the EPA TOCOR should developments arise that will affect the conduct or schedule of the project.

Quality assurance (QA) is an important component of EPA’s work to assure that environmental information is appropriate for its intended use. Therefore, consistent with the agency's QA requirements, the contractor shall develop a project-specific QA project plan (PQAPP) as indicated in Section III below within 2 weeks of the task order award. If changes are deemed necessary by the EPA TOCOR, a revised PQAPP shall be submitted to the EPA TOCOR within 2 weeks of receiving comments from the EPA TOCOR. The project specific quality assurance requirements must be addressed in the monthly progress reports.

The contractor shall include in their monthly reports any adjustments to their quality assurance plan necessitated by unanticipated needs for specialized quality assurance measures. The contractor shall differentiate and report the expenditures for CCL chemical contaminants and microbial contaminants separately for each task in monthly reports.

Deliverables:

- 0.1 Initial conference call with the EPA TOCOR
- 0.2 PQAPP
- 0.3 Monthly Progress Reports

Task 1. Data Analysis and Evaluation for CCL 5 and continued for CCL 6- Amended to include referenced data sources submitted in Final SAB report.

The contractor shall support EPA's data analysis and evaluation of the SAB recommendations, public comments and other data analysis and manipulation requested by the EPA management. The contractor shall compile a summary (table or spreadsheets) of any new data sources submitted and/or referenced data sources with the SAB recommendation and/or public comments and compare this data to the data EPA has previously collected in the CCL 5 Universe to determine whether the data provided is new. If new data is submitted, the contractor shall evaluate and document whether the data meets the assessment factors (developed under CCL 5) to be considered in the CCL process (i.e., is the data relevant, is the data complete (including meeting quality requirements), is the data redundant with any other more comprehensive data sources), and is the data retrievable, and evaluate whether the data could be used for screening and scoring based on the data hierarchies developed under CCL 5. This is to ensure that the best available data is used in the CCL 5 development process. If a data source can be used in the CCL 5 process (based on the factors described above), at the written direction of the EPA TOCOR, the contractor shall extract available data elements in a simple Microsoft Excel spreadsheet. If needed, per technical direction, the contractor shall conduct statistical analyses on the new data provided (e.g., calculate mean, median, 90th percentile, and max concentrations) so that EPA can re-screen and/or re-score the contaminants and document any changes to the draft CCL 5.

If recommendations are made on the development of the Draft CCL 5, the contractor shall, at the direction of the EPA TOCOR, provide a spreadsheet(s) or other analyses (including those completed under sub-task 4.3) showing how those changes would impact the CCL 5 Universe, PCCL, and/or final CCL. The contractor shall also, at the written direction of the EPA TOCOR, provide written descriptions of how such changes would impact the CCL 5 process.

For referenced data sources that were submitted in the Final SAB report, Cadmus shall evaluate and document whether the referenced data sources meets the assessment factors to be considered in the CCL process (i.e., is the data relevant, is the data complete (including meeting quality requirements), is the data redundant with any other more comprehensive data sources), and is the data retrievable, and evaluate whether the data could be used for screening and scoring based on the data hierarchies developed under CCL 6. This is to ensure that the best available data is used in the CCL 6 development process. If a data source can be used in the CCL 6 process (based on the factors described above), at the written direction of the EPA TOCOR, the contractor shall extract available data elements in a simple Microsoft Excel spreadsheet. If needed, per technical

direction, the contractor shall conduct statistical analyses on the new referenced data provided (e.g., calculate mean, median, 90th percentile, and max concentrations).

Deliverables:

- 1.1 Draft(s) of summary spreadsheet(s) of any data/data source submitted with the SAB recommendations and/or public comments.
- 1.2 Final summary spreadsheet of any data/data source submitted with the SAB recommendations and/or public comments.
- 1.3 Draft(s) of summaries of changes between the Draft CCL 5 Universe, PCCL, and CCL.
- 1.4 Final summary of changes between the Draft CCL 5 Universe, PCCL, and CCL.
- 1.5 Draft written description of CCL 5 impacts of suggested changes.
- 1.6 Final written description of CCL 5 impacts of suggested changes.
- 1.7 Draft summary spreadsheet of referenced data sources
- 1.8 Final summary spreadsheet of referenced data sources

Task 2. Support documents for Final CCL 5 publication

EPA is in the process of updating technical support documents for the Final CCL 5. The contractor shall provide support with formatting, drafting, and revising tables, designing diagrams, figures, providing editorial review, etc., and ensuring that the support documents are 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials that will be provided to the contractor.

Upon written technical direction from the EPA TOCOR, the contractor shall edit support documents based on any changes made between the Draft CCL 5 and Final CCL 5 based on public, SAB, workgroup, or management comments.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Final CCL 5 Technical Support Document and other support documents (CIS document, Response to Comments (RTC), response to the SAB report, etc.) for finalizing the CCL 5.

Deliverables:

- 2.1 Draft(s) of support documents for the Final CCL 5.
- 2.2 Final support documents for the Final CCL 5 (508 compliant).

Task 3. Meeting Support for SAB Panel Deliberations

The contractor shall attend up to two 5-hour meetings related to the CCL 5 process and the Draft CCL 5. The contractor shall provide for the taking of meeting notes and shall provide a copy of the draft summary of the meeting notes to the EPA TOCOR within 5 working days of the

conclusion of the meeting. Per the EPA TOCOR technical direction, the contractor shall provide the final summary of the meeting notes.

Deliverables:

- 3.1 Draft summary of meeting notes.
- 3.2 Final summary of meeting notes.

Task 4. Review/Update Data Sources and Data Collection

Upon written technical direction from the EPA TOCOR, the contractor shall evaluate the data sources that have been updated since the CCL 5 data collection cut-off date and new potential data sources for use in CCL 6. The potential data sources shall include those that were not considered for CCL 3, CCL 4, or CCL 5 and that became available after the data collection cut-off date for CCL 5. During this evaluation, the contractor shall consider the assessment factors of relevance, completeness, redundancy, and retrievability as described in the Draft CCL 5 Technical Support Document. The contractor shall list and summarize the potential data sources in a Microsoft Excel file and update the data sources. The summaries shall identify new data sources, flag the data sources that need to be updated, and provide any other relevant information. Based upon written technical direction, the contractor shall collect data from a select number of new and/or updated data sources specified by the EPA TOCOR and provide summary spread sheets or documents for existing and potentially new data sources that may be deemed necessary per EPA TOCOR. At the direction of the EPA TOCOR, the contractor shall continue to update the Final CCL 5 data compilation for CCL 6. The data compilation shall meet OGWDW and EPA data warehouse standards.

Deliverables:

- 4.1 Draft lists and summaries of new data sources in Excel.
- 4.2 Final lists and summaries of new data sources in Excel.
- 4.3 Draft summaries of extracted and analyzed data in a table format
- 4.4 Final summaries of extracted and analyzed data in a table format

~~Task 5. Evaluation and Summaries of Nominated Contaminants~~

~~Upon written technical direction from the EPA TOCOR, the contractor shall identify and evaluate relevant data submitted during the CCL 6 public nominations process. The contractor shall provide summaries of the relevant data in a table format.~~

~~Deliverables:~~

- ~~5.1 Draft summaries of the relevant data in a table format~~
- ~~5.2 Final summaries of the relevant data in a table format.~~

Task 6: Continue revising and updating the quality assurance/quality control (QA/QC) reports for the CISs

Under WA 5-06 and TO 68HERC21F0119, Cadmus produced drafts of the CCL Data Management and QA/QC Report which detailed the data management and QA/QC processes used to produce the internal-use CISs and the Draft CCL 5 Chemical Contaminant Information Sheets Technical Support (aka external-facing CISs published with the Draft CCL 5). This task presents continuation of that work.

Upon written technical direction from the EPA TOCOR, Cadmus shall update the CCL Data Management and QA/QC Report, at a minimum, with the data management and QA/QC process conducted to produce the external-facing CISs for the Final CCL 5.

The report shall include a description of any QA/QC conducted on the data (i.e. input files) and manual QA/QC of the CISs. The report shall also include any description of the QA/QC process conducted on the code used to generate the simple files and populate the CISs. The report shall provide concepts and generalized processes for the different types of files mentioned above (i.e. simple input files, CIS, code for data files, and code for CISs).

Deliverables:

- 6.1 Draft(s) of the CCL Data Management and QA/QC Report
- 6.2 Final CCL Data Management and QA/QC Report

Amendment-Task 7: Continue writing a data management and QA/QC scoping document for CCL 6. Develop a scoping document/prioritization document post CCL 5, Pre-CCL 6 and continuing into the CCL 6 process using the Final SAB Report of Recommendations

Under TO 68HERC21F0119, Cadmus delivered a draft data management and QA/QC scoping document for CCL 6. Upon written technical direction from the EPA TOCOR, Cadmus shall update the draft data management and QA/QC scoping document for CCL 6 and produce a final data management and QA/QC scoping document for CCL 6. The plan shall include, but is not limited to, the following components and considerations: database design, data quality management, data acquisition and storage, data modeling, and metadata management.

CCL data (i.e. primary and supplemental data) is compiled at different phases of CCL development process, and used in different aspects of the CCL development process (e.g. screening code, generating the CISs, and classification models). At the direction of the TOCOR, the contractor shall include a schema within the data management scoping document that takes all CCL data-related needs into account. For example, a subset of data elements from all data

associated with Universe chemicals is used in the screening code, whereas nearly all data elements associated with PCCL chemicals are used in classification and included on the CISs. If CCL data are moved to a relational database (e.g. MySQL or Microsoft Access), the database needs to be designed so that data can be queried or integrated for use in the screening code and for developing the CISs.

Additionally, at the direction of the EPA TOCOR, the data management plan and QA/QC scoping document shall include considerations for data accessibility that simplifies access to the data for EPA staff and the public. At the direction of the EPA TOCOR, the contractor shall consider alternative methods for the CIS, such as an online data dashboard (e.g. R Shiny or Qlik) or creating tables and forms in Microsoft Access.

Upon written technical direction from EPA TOCOR, Cadmus shall, evaluate and develop a CCL 5 scoping document to prioritize efficiently the recommendations in the SAB final report (which is currently scheduled to be published in August 2022). The scoping document should be organized by prioritizing which recommendations can efficiently and effectively be done post CCL 5 and prior to beginning CCL 6. Based on SAB's final report of written recommendations, other recommendations should be compiled and organized and describe which recommendations can be accomplished throughout different phases of the CCL 6 process.

Deliverables:

- 7.1 Draft(s) of Data Management and QA/QC scoping document.
- ~~7.2 Final Data Management and QA/QC scoping document.~~
- 7.3 Draft (s) of CCL 5/6 Scoping and Prioritization Document
- 7.4 Final CCL 5/6 Scoping and Prioritization Document

Task 8. Continue improving and refining existing data files and code

In preparation for CCL 6, the contractor shall continue to support EPA's efforts to improve and/or revise existing data files and code and document the changes and improvements.

Sub-task 8.1: Continue improving the CIS data files

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall iteratively:

1. Revise and/or update the new data file format (as needed).
2. Reduce the number of data source files and/or revise data source files used in the CISs (e.g., combine data files that contain redundant data or combine similar data into a single file).
3. Conduct quality assurance, make corrections, and/or updates, if necessary, to data that were provided by EPA or the data that were generated by the contractor, such as conduct

quality assurance/quality control analysis on health and occurrence attribute scores and cross reference the scores to the attribute scoring protocols, etc.

4. Document the changes and improvements to the CIS files, quality assurance activities, results and remediation steps of the QA/QC in a CCL 5 Data Improvement report, etc.

Improving the CIS data files will be an iterative process. Therefore, the contractor shall write and provide draft versions of the CCL 5 Data Improvement report, and revise/update it, as the contractor makes additional revisions/corrections to the CIS data files, as directed by the EPA TOCOR. EPA expects that improving the CIS data files will consist of approximately 5 iterations. Upon completion of CIS data files improvements, the contractor shall finalize the CCL 5 Data Improvement report, as directed by the EPA TOCOR.

Deliverables:

- 8.1.1 Revised and/or corrected data source files.
- 8.1.2 Iterative draft versions of the CCL 5 Data Improvement report.
- 8.1.3 Draft(s) of the CCL 5 Data Improvement report.
- 8.1.4 Final CCL 5 Data Improvement report.

Sub-task 8.2: Continue improving screening files

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall:

1. Conduct quality assurance activities on existing data files used in the screening step. Quality assurance activities may include, but are not limited to, checking inconsistencies between primary data source files used in screening vs classification and/or checking and correcting DTXSIDs.
2. Acquire and/or conduct analyses on the data (e.g., download data and calculate summary statistics).
3. Transform the data into the “simple file” format.
4. Document the results of the above analyses and quality assurance activities in report documents (spreadsheets and/or Word documents).

For example: EPA needs to identify existing errors in DTXSID assignments to contaminants in the Pre-Universe and/or Universe files used for screening. Cadmus shall conduct QA/QC on screening files to identify any errors and make corrections. Cadmus shall document QAQC activities, the findings, and corrections made in a summary document.

Deliverables:

- 8.2.1 Updated and/or revised data files.
- 8.2.2 Documents detailing the analyses and quality assurance activities.

Sub-task 8.3: Continue operating the screening code and conducting analysis of output

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall revise, update, and/or run the code EPA developed to generate the PCCL 5. This code is hereafter referred to as “screening code” and is further described in the numbered list below. Per technical direction, using the screening code, the contractor shall generate input and output files, and analyze and document how contaminants are screened. The contractor shall revise, update, and/or run the screening code to prepare for the Final CCL 5 and for CCL 6.

EPA expects that the contractor will operate the screening code, make revisions and/or updates, and analyze the output approximately 6 times to prepare for the Final CCL 5. EPA expects that the contractor will operate the screening code, make revisions, and/or updates and analyze the output approximately 8 times for CCL 6.

The screening code, documented in R Markdown, consists of four primary components:

1. “Pre-processing” primary data sources: A series of individual R Markdown documents dedicated to pre-processing a primary data source. The pre-processing scripts extract and transform data elements relevant to screening into a simple file format. The outputs of the pre-processing scripts are simple data files associated with each primary data source.
2. “Making the Pre-Universe”: This R Markdown document aggregates the simple data files produced from the pre-processing code into the pre-universe file.
3. “ID and Screen”: This R Markdown document contains manual corrections to DTXSIDs, assigns unique internal-use NO_DTXSID identifiers to contaminants without existing DTXSIDs, and adds data from the CompTox Chemicals Dashboard. The input file is the pre-universe file and the output of this code is the universe file.
4. “Screening”: This R Markdown document uses the data in the universe file, establishes the screening point hierarchy using statistical methods (quantiles and summary statistics), assigns screening points according to the screening point assignment hierarchy, and calculates the screening score for each contaminant in the universe. The outputs of this code are the Scored Universe file and PCCL file.

Additionally, upon written technical direction from the EPA TOCOR, the contractor shall develop a method for version control and file sharing to manage and track changes to the screening code to facilitate collaboration with EPA (e.g., screening code is managed on a Git repository that EPA and the contractor can easily access).

Furthermore, the contractor shall conduct and document QA/QC activities while operating, revising, and updating the screening code and conducting analyses, as directed by the EPA TOCOR. QA/QC activities may include, but are not limited to, code reviews after changes are made, checking that screening points are assigned to data elements correctly, checking unit conversions, calculating the screening scores of a random sample of chemicals in the Scored Universe file to confirm the expected screening score.

The contractor shall document the QA/QC activities and analyses in a summary document and/or spreadsheet.

Example 1: EPA needs to include new or revised data (e.g. finalized UCMR 4 data) into the screening code or changes how a data element is assigned screening points (e.g. change a non-national representative water study to a nationally-representative water study). This type of change involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code, update the code, and generate output files for EPA. The contractor shall conduct an analysis that compares the draft PCCL 5 to the updated PCCL and generate an updated screening point hierarchy. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Example 2: EPA needs to test out a new screening point hierarchy, incorporate new CCL 6 data sources, and obtain a new Scored Universe file for CCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output files for EPA. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Deliverables:

- 8.3.1 Screening code input and output files.
- 8.3.2 Screening code output analyses summary documents.
- 8.3.3 Screening code with documented changes on a code repository site.
- 8.3.4 Documents containing the analyses and quality assurance activities.

Option year 1 (March 1, 2023 – February 29, 2024)

Task 4. Continuation of Review/Update Data Sources and Data Collection from Base Year

Chemicals and Microbes

Upon written technical direction from the EPA TOCOR, the contractor shall evaluate the data sources that have been updated since the CCL 5 data collection cut-off date and new potential data sources for use in CCL 6. The potential data sources shall include those that were not considered for CCL 3, CCL 4, or CCL 5 and that became available after the data collection cut-off date for CCL 5. During this evaluation, the contractor shall consider the assessment factors of relevance, completeness, redundancy, and retrievability as described in the Draft CCL 5 Technical Support Document or as updated by EPA for CCL 6. The contractor shall list and summarize the potential data sources in a Microsoft Excel file and update the data sources. The summaries shall identify new data sources, flag the data sources that need to be updated, and provide any other relevant information. Based upon written technical direction, the contractor shall collect data/extract from a select number of new and/or updated data sources specified by

the EPA TOCOR and provide summary spread sheets or documents for existing and potentially new data sources that may be deemed necessary per EPA TOCOR. At the direction of the EPA TOCOR, the contractor shall continue to update the Final CCL 5 data compilation for CCL 6. The data compilation shall meet OGWDW and EPA data warehouse standards.

Deliverables:

Chemicals

- 4.1 Draft lists and summaries of new data sources in Excel.
- 4.2 Final lists and summaries of new data sources in Excel.
- 4.3 Draft summaries of extracted and analyzed data in a table format
- 4.4 Final summaries of extracted and analyzed data in a table format

Microbes

- 4.5 Draft list and short summaries of new/updated data sources for CCL 6 microbial contaminants

Task 5. Evaluation and Summaries of Nominated Contaminants (moved from base year to start in Option Year 1)

Chemical and Microbes

Upon written technical direction from the EPA TOCOR, the contractor shall identify and evaluate relevant data submitted during the CCL 6 public nominations process. The contractor shall provide summaries of the relevant data in a table format.

Deliverables:

Chemicals

- 5.1 Draft summaries of the relevant data in a table format
- 5.2 Final summaries of the relevant data in a table format

Microbes

- 5.3 Summaries of relevant data in a table format.

Task 8. Continue improving and refining existing data files and code (continued and amended from base year)

***Note: Not all sub-tasks from Task 8 in base year are continued in Option Year 1.**

The contractor shall continue to support EPA's efforts to improve and/or revise existing CCL data files and code and document the changes and improvements.

Sub-task 8.2: Continue improving screening files

Chemicals

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall:

1. Conduct quality assurance activities on existing data files used in the screening step. Quality assurance activities may include, but are not limited to, checking inconsistencies between primary data source files used in screening vs classification and/or checking and correcting DTXSIDs.
2. Acquire and/or conduct analyses on the data (e.g., download data and calculate summary statistics).
3. Transform the data into the “simple file” format.
4. Document the results of the above analyses and quality assurance activities in report documents (spreadsheets and/or Word documents).

For example: EPA needs to identify existing errors in DTXSID assignments to contaminants or refine the DTXSID assignments in the Pre-Universe and/or Universe files used for screening. One refinement may include updating the process for groupings that were made in CCL 5 such as grouping DTXSIDs for chemicals that would dissociate to the same compound in water. Possible grouping categories include organic and inorganic salts, structural and stereoisomers, metals. Upon technical direction, the contractor shall conduct analyses to support EPA in identifying improved approaches to chemical groupings and support for implementing the identified approaches. Cadmus shall conduct QA/QC on screening files to identify any errors and make corrections. Cadmus shall document QAQC activities, the findings, and corrections made in a summary document.

Deliverables:

8.2.1 Updated and/or revised data files.

8.2.2 Documents detailing the analyses, results, and quality assurance activities.

Task 9: Updating/Revising screening process

Chemicals

Subtask 9.1 Chemical screening (Continue operating the screening code and conducting analysis of output)

Upon written technical direction from the EPA TOCOR, as necessary, the contractor shall revise, update, and/or run the code EPA developed to generate the PCCL 5. This code is hereafter referred to as “screening code” and further described in the numbered list below. Per technical direction, using the screening code, the contractor shall generate input and output files, and analyze and document how contaminants are screened. The contractor shall revise, update, and/or run the screening code for CCL 6 and to generate the PCCL 6.

EPA expects that the contractor will operate the screening code, make revisions, and/or updates and analyze the output approximately ~~four~~ eight times for CCL 6.

The screening code, documented in R Markdown, consists of four primary components:

1. “Pre-processing” primary data sources: A series of individual R Markdown documents dedicated to pre-processing a primary data source. The pre-processing scripts extract and transforms data elements relevant to screening into a simple file format. The outputs of the pre-processing scripts are simple data files associated with each primary data source.
2. “Making the Pre-Universe”: This R Markdown document aggregates the simple data files produced from the pre-processing code into the pre-universe file.
3. “ID and Screen”: This R Markdown document contains manual corrections to DTXSIDs, assigns unique internal-use NO_DTXSID identifiers to contaminants without existing DTXSIDs, and adds data from the CompTox Chemicals Dashboard. The input file is the pre-universe file and the output of this code is the universe file.
4. “Screening”: This R Markdown document uses the data in the universe file, establishes the screening point hierarchy using statistical methods (quantiles and summary statistics), assigns screening points according to the screening point assignment hierarchy, and calculates the screening score for each compound in the universe. The outputs of this code are the Scored Universe file and PCCL file.

Additionally, upon written technical direction from the EPA TOCOR, the contractor shall develop a method for version control and file sharing to manage and track changes to the screening code to facilitate collaboration with EPA (e.g., screening code is managed on a Git repository that EPA and the contractor can easily access).

Furthermore, the contractor shall conduct and document QA/QC activities while operating, revising, and updating the screening code and conducting analyses, as directed by the EPA TOCOR. QA/QC activities may include, but are not limited to, code reviews after changes are made, checking that screening points are assigned to data elements correctly, checking unit conversions, calculating the screening scores of a random sample of chemicals in the Scored Universe file to confirm the expected screening score.

The contractor shall document the QA/QC activities and analyses in a summary document and/or spreadsheet.

Example 1: EPA needs to update the screening point hierarchy, incorporate several new primary data sources into the screening step, and obtain the PCCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output files for EPA. The contractor shall document the analyses and results, and QA/QC activities in a summary document.

Example 2: EPA needs to include new or revised data (e.g. finalized UCMR 4 data) into the screening code or changes how a data element is assigned screening points (e.g. change a non-national representative water study to a nationally-representative water study). This type of change involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code, update the code, and generate output files for EPA. The contractor shall conduct an analysis that compares the draft PCCL 5 to the updated PCCL 6 and generate an updated screening point hierarchy. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Example 3: EPA needs to test out a new screening point hierarchy, incorporate new CCL 6 data sources, and obtain a new Scored Universe file for CCL 6. This type of test involves operating all four components of the screening code. The contractor shall implement the requested changes in the screening code and generate output files for EPA. The contractor shall document the analyses and results, and quality assurance activities in a summary document.

Deliverables:

- 9.1.1 Screening code input and output files.
- 9.1.2 Screening code output analyses summary documents.
- 9.1.3 Screening code with documented changes on a code repository site.
- 9.1.4 Documents containing the analyses and QA/QC activities.

Microbes

Subtask 9.2 New Microbial contaminant(s) identification and screening

Per technical direction from the EPA TOCOR, the contractor shall identify “new” microbial contaminants that are pathogenic to humans and identified since CCL 5’s search (post December 2019) of “new” microbes; these organisms will be added to CCL 6’s Microbial Universe. The contractor shall conduct a systematic literature search of any updated (and approved) references/data sources used to build the CCL 5 microbial universe, any nominations in the CCL 6 docket, or through a literature search of pathogens discovered since the development of CCL 5. The contractor shall document in detail the methodology for searching for the “new” microbes and document the reference.

The contractor shall add these pathogens to the existing CCL Microbial Universe (CCL 5 microbial universe). For microbial contaminants, the contractor shall run the newly identified microbes for CCL 6 through the CCL 6 microbial exclusionary screening criteria used to screen from the Universe to develop PCCL. The contractor shall provide the results of screening for the newly identified microbes, documenting the criterion on which the microbe was excluded and providing the reference that supports the exclusion.

The contractor shall review the screening results from CCL 5’s universe to see if any results of screening need to be revised and/or updated. The contractor shall also update and provide full

references with page numbers for all microbial contaminants in the CCL 6 universe in regards to their exclusion criteria. The deliverable should look like Appendix B in CCL 5's TSD for Microbial Contaminants.

Deliverable(s)

9.2.1 Identify any "new" microbial contaminants since CCL 5 and add to the microbial universe.

9.2.2 Update the exclusionary screening table with new and existing microbes screening results.

Task 10. Calculate Final Hazard Quotients and Attribute scores

Chemicals

Per technical direction from the EPA TOCOR, the contractor shall identify data and derive and select the final Hazard Quotients (fHQs) and final prevalence and magnitude attribute scores for up to 600 chemical contaminants.

Deliverables:

10.1 Draft values for attribute scores and fHQs.

10.2 Final values for attribute scores and fHQs.

Task 11. Literature Review and CIS

Chemicals

Sub-Task 11.1 Chemical Literature Review

Similar to CCL 5, EPA will be screening the Universe of contaminants for CCL 6 down to a Preliminary CCL (PCCL) using available occurrence and health effects data in the compiled contaminant prioritization data set. To evaluate the PCCL, and narrow it down to a draft CCL, a literature search will be conducted to identify supplemental occurrence data which would not have been included in the Universe because the data did not meet the requirements of a primary data source used to develop the Universe. Per technical direction from the EPA TOCOR, the contractor shall conduct a systematic literature search and review for occurrence data for a pilot set of 20-30 PCCL 6 chemical up to 300 PCCL contaminants. It is assumed that the contaminants are data rich. This will help to ensure that the best available data is being used in the CCL classification step.

The EPA TOCOR will review the results of the contractor's occurrence literature search and provide approval for the literature identified by the contractor. Per technical direction from the

EPA TOCOR, the contractor shall extract the data from the EPA approved literature into a tabular file.

Deliverables:

11.1.0 Literature search for Pilot 20-30 chemicals (new deliverable)

Sub-Task 11.2 Evaluator Chemical Contaminant Information Sheets

Per technical direction from the EPA TOCOR, the contractor shall use the approach of creating the CISs that was developed for CCL 5 (e.g., formatting data, populating data, and generating the CIS using R and Excel). Per direction of the EPA TOCOR, the contractor shall generate drafts of the CIS template for EPA approval. Per technical direction from the EPA TOCOR, the contractor shall make improvements and updates to the CIS (e.g., making “static” sections “dynamic”, shifting data sections in the template, index file, etc), add new data elements (e.g., reporting limits, chemical names next to data entries, etc), add new data sources (e.g. new primary data sources or data sources identified through the occurrence literature search) and/or add new or updated data files to the CISs. Additionally, per the direction of the EPA TOCOR, the contractor shall compile additional CIS data on PCCL chemicals (e.g., chemical use information, CASRNs, DTXIDs, and CompTox Dashboard URLs, etc) into tabular files.

Per technical direction from the EPA TOCOR, the contractor shall generate Contaminant Information Sheets for Pilot 20-30 chemical contaminants for the evaluation teams in the Classification Step for the Draft CCL 6.

Deliverables:

11.2.0 Draft(s) of the updated CIS Template in Excel for evaluators

11.2.1 Draft of the data file for the 20-30 pilot set of chemical contaminants

11.2.2 Draft CIS in Excel of the pilot set of 20-30 chemical contaminants, intended for evaluators and internal review

Sub-Task 11.3 Microbial Contaminant Information Sheets (CISs)

For all the PCCL 6 microbial contaminants, the contractor shall perform a search for waterborne outbreaks reported in CDC’s National Outbreak Reports (NORS) (from 2017 to TBD). The contractor shall also perform a literature search on the PCCL 6’s microbial contaminants’ occurrence in water (literature supporting occurrence in U.S. source water, U.S. drinking water, or not in the U.S.) and a literature search on the health effects on the PCCL 6 microbial contaminants and update their Contaminant Information Sheet (CIS). EPA will provide the microbial CISs to contractor (Note: the microbial CISs have been reformatted by EPA since CCL 5). For all reported WBDOs pulled from NORS, request from CDC the speciated data for the reported waterborne outbreaks.

The contractor shall calculate the composite scores for each microbial PCCL contaminant using calculation found in Appendix F, page F-2, from the TSD for CCL 5-Microbial Contaminants and document the composite scores on the CISs.

The contractor shall document the methodology for the product of this sub-task.

Deliverable(s)

11.3.1 Update or develop PCCL 6 microbial CISs based on results of searches for occurrence and health effects and provide references.

Task 12. Support documents for Draft CCL 6 publication

Chemicals and Microbes

Sub-Task 12.1 Public facing Technical Support Documents for Draft CCL 6

Per technical direction from the EPA TOCOR, the contractor shall support the drafting and revising of the technical support documents for the draft CCL 6. This includes support with drafting and revising chapters, formatting, drafting and revising tables, designing diagrams, figures, providing editorial review etc., and making support documents 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials that will be provided to the contractor.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the Draft CCL 6 Technical Support Document and other support documents (CIS document, RTC, response to the SAB report, etc.) for finalizing the CCL 5.

For the CIS technical support document, the process is assumed to be similar to the Draft CCL 5, but more efficient as a result of the improvements made in Task Order # 68HERC21F0119.

Deliverables:

Chemicals

12.1.1 Draft(s) of support documents for the Draft CCL 6.

12.2 ~~Final support documents for the Draft CCL 6 (508 compliant).~~

Microbes

12.1.2 ~~Draft(s) of support documents for the Draft CCL 6 microbial contaminants.~~

Chemicals

Sub-Task 12.2 Internal Quality assurance/quality control (QA/QC) reports for Draft CCL6

Upon written technical direction from the EPA TOCOR, Cadmus shall produce drafts of the CCL 6 Data Management and QA/QC Report, at a minimum, with the data management and QA/QC process conducted to produce the CISs for the CCL 6.

The report shall include a description of any QA/QC conducted on the data (i.e., input files) and manual QA/QC of the CISs. The report shall also include any description of the QA/QC process conducted on the code used to generate the simple files and populate the CISs. The report shall provide concepts and generalized processes for the different types of files mentioned above (i.e. simple input files, CIS, code for data files, and code for CISs).

Deliverables:

12.2.1 Draft(s) of the CCL 6 Data Management and QA/QC Report

Option Year 2 (March 1, 2024 – February 28, 2025)

Task 11. Continuation and expansion of Literature Review and CIS

Chemicals

Sub-Task 11.1 Chemical Literature Review

Similar to CCL 5, EPA will be screening the Universe of contaminants for CCL 6 down to a Preliminary CCL (PCCL) using available occurrence and health effects data in the compiled contaminant prioritization data set. To evaluate the PCCL, and narrow it down to a draft CCL, a literature search will be conducted to identify supplemental occurrence data which would not have been included in the Universe because the data did not meet the requirements of a primary data source used to develop the Universe. Per technical direction from the EPA TOCOR, the contractor shall conduct a systematic literature search and review for occurrence data for up to 300 PCCL 6 chemical contaminants. It is assumed that the contaminants are data rich. This will help to ensure that the best available data is being used in the CCL classification step.

The EPA TOCOR will review the results of the contractor's occurrence literature search and provide approval for the literature identified by the contractor. Per technical direction from the EPA TOCOR, the contractor shall extract the data from the EPA approved literature into a tabular file.

Deliverables:

11.1.1 Draft results of occurrence literature search.

11.1.2 Final results of occurrence literature search.

11.1.3 Table(s) with extracted occurrence literature search data.

Sub-Task 11.2 Evaluator Chemical Contaminant Information Sheets

Per technical direction from the EPA TOCOR, the contractor shall generate Contaminant Information Sheets for up to 300 chemical contaminants for the evaluation teams in the Classification Step for the Draft CCL 6.

Per technical direction from the EPA TOCOR, the contractor shall use the approach of creating the CISs that was developed for CCL 5 (e.g., formatting data, populating data, and generating the CIS using R and Excel). Per direction of the EPA TOCOR, the contractor shall generate drafts of the CIS template for EPA approval. Per technical direction from the EPA TOCOR, the contractor shall make improvements and updates to the CIS (e.g., making “static” sections “dynamic”, shifting data sections in the template, index file, etc), add new data elements (e.g., reporting limits, chemical names next to data entries, etc), add new data sources (e.g. new primary data sources or data sources identified through the occurrence literature search) and/or add new or updated data files to the CISs. Additionally, per the direction of the EPA TOCOR, the contractor shall compile additional CIS data on PCCL chemicals (e.g., chemical use information, CASRNs, DTXIDs, and CompTox Dashboard URLs, etc) into tabular files.

Deliverables:

11.2.0 Draft(s) of the CIS Template for evaluators (continuation from OY 1)

11.2.3 Final CIS Template (move to OY 2)

11.2.4 Draft CIS data files

11.2.5 Final CIS data files (move to OY 2)

11.2.6 Chemical Contaminant Information Sheets in Excel or PDF files for the evaluators

Sub-Task 11.3 Microbial Contaminant Information Sheets

For all the PCCL 6 microbial contaminants, the contractor shall perform a search for waterborne outbreaks reported in CDC’s National Outbreak Reports (NORS)(from 2017 to TBD). The contractor shall also perform a literature search on the PCCL 6’s microbial contaminants’ occurrence in water (literature supporting occurrence in U.S. source water, U.S. drinking water, or not in the U.S.) and a literature search on the health effects on the PCCL 6 microbial contaminants and update their Contaminant Information Sheet (CIS). EPA will provide the microbial CISs to contractor (Note: the microbial CISs have been reformatted by EPA since CCL 5). For all reported WBDOs pulled from NORS, request from CDC the speciated data for the reported waterborne outbreaks.

The contractor shall calculate the composite scores for each microbial PCCL contaminant using calculation found in Appendix F, page F-2, from the TSD for CCL 5-Microbial Contaminants and document the composite scores on the CISs.

The contractor shall document the methodology for the product of this sub-task.

Deliverable(s)

11.3.1 Update or develop PCCL 6 microbial CISs based on results of searches for occurrence and health effects and provide references.

Task 12.2: Continue drafting the quality assurance/quality control (QA/QC) reports for the CCL 6 from Option Year 1

Chemicals

Upon written technical direction from the EPA TOCOR, Cadmus shall produce drafts of the CCL 6 Data Management and QA/QC Report, at a minimum, with the data management and QA/QC process conducted to produce the CISs for the CCL 6.

The report shall include a description of any QA/QC conducted on the data (i.e., input files) and manual QA/QC of the CISs. The report shall also include any description of the QA/QC process conducted on the code used to generate the simple files and populate the CISs. The report shall provide concepts and generalized processes for the different types of files mentioned above (i.e. simple input files, CIS, code for data files, and code for CISs).

Deliverables:

12.2.1 Draft(s) of the CCL 6 Data Management and QA/QC Report

12.2.2 Final CCL 6 Data Management and QA/QC Report

Task 13. Support documents for **Draft CCL 6 publication**

Chemical and Microbes

Per technical direction from the EPA TOCOR, the contractor shall support the drafting and revising of the technical support documents for the draft CCL 6. This includes support with drafting and revising chapters, formatting, drafting and revising tables, designing diagrams, figures, providing editorial review etc., and making support documents 508 compliant. These products shall adhere to the OGWDW standard operating procedures for printed or web related materials.

Based on written technical direction from the EPA TOCOR, the contractor shall edit support documents based on any changes made ~~between the Draft CCL 5 and~~ after Final CCL 5 was published or based on public, SAB, workgroup and/or management comments.

Upon written technical direction from the EPA TOCOR, the contractor shall finalize and make 508 compliant the chemical and microbial technical support documents for the Draft CCL 6 and

other support documents (CIS document, RTC, response to the SAB report, etc.) for the Draft CCL 56.

For the CIS technical support document, the process is assumed to be similar to the Draft and Final CCL 5, but more efficient as a result of the improvements made in Task Order # 68HERC21F0119.

Deliverables:

Chemical

13.1 Final support documents for the Draft CCL 6 including CIS (508 compliant).

13.2 Draft(s) of support documents for the Final CCL 6.

~~13.2 Final support documents for the Final CCL 6 (508 compliant).~~

Microbes

13.3 Final support documents for the Draft CCL 6 microbial contaminants (508 compliant).

13.4 Draft(s) of support documents for the Final CCL 6 microbial contaminants.

Task 14: Continue writing a data management and QA/QC scoping document for CCL.

Chemicals

Under TO 68HERC21F0119, Cadmus delivered a draft data management and QA/QC scoping document for CCL 6. Upon written technical direction from the EPA TOCOR, Cadmus shall update the draft data management and QA/QC scoping document for future CCLs and produce a final data management and QA/QC scoping document for CCLs. The plan shall include, but is not limited to, the following components and considerations: database design, data quality management, data acquisition and storage, data modeling, and metadata management.

CCL data (i.e. primary and supplemental data) is compiled at different phases of CCL development process, and used in different aspects of the CCL development process (e.g. screening code, generating the CISs, and classification models). At the direction of the TOCOR, the contractor shall include a schema within the data management scoping document that takes all CCL data-related needs into account. For example, a subset of data elements from all data associated with Universe chemicals is used in the screening code, whereas nearly all data elements associated with PCCL chemicals are used in classification and included on the CISs. If CCL data are moved to a relational database (e.g. MySQL or Microsoft Access), the database needs to be designed so that data can be queried or integrated for use in the screening code and for developing the CISs.

Additionally, at the direction of the EPA TOCOR, the data management plan and QA/QC scoping document shall include considerations for data accessibility that simplifies access to the data for EPA staff and the public. At the direction of the EPA TOCOR, the contractor shall

consider alternative methods for the CIS, such as an online data dashboard (e.g. R Shiny or Qlik) or creating tables and forms in Microsoft Access.

Deliverables:

14.1 Draft(s) of Data Management and QA/QC scoping document.

14.2 Final Data Management and QA/QC scoping document.

Task 15: Support for the CCL Evaluation Processes

Sub-task 15.1 Support for the Chemical Contaminants Evaluation Process

Per technical direction from the EPA TOCOR, the contractor shall provide support for the evaluation process used to determine the PCCL chemicals selected for listing on the CCL. EPA will follow a process like that described in section 4.5 of the *Technical Support Document for the Final Fifth Contaminant Candidate List (CCL 5) – Chemical Contaminants*.

EPA will place 14 agency personnel, referred to as “chemical evaluators,” onto two evaluation teams that will meet separately, once a week, beginning in March 2024 and running through July 2024. For these evaluation meetings, the two teams will each be assigned a different set of approximately 10 PCCL chemicals to review, referred to as “batches.” The contractor shall assume the PCCL will contain up to 300 chemicals, leading to a potential of 30 batches and evaluation meetings. The contractor shall assume a duration of 1.5 hours per evaluation meeting.

The contractor shall prepare and deliver two documents per evaluation meeting that are used to guide team discussions for finalizing listing decisions for each batch:

1) A Microsoft Forms survey, documenting the listing decisions and written justifications from the individual evaluators for each of the PCCL chemical in a batch. The contractor shall handle all tasks associated with the creation, delivery and closure of each survey. In advance of each survey, the contractor shall also be responsible for the selection, randomization, and assignment of chemicals from the PCCL placed under each batch.

2) A Microsoft PowerPoint presentation, summarizing the results of the survey. The contractor shall calculate the survey listing averages for each chemical and upload them together with the written justifications from the chemical evaluators into a slide for each batch of chemicals.

EPA will provide a blank template for these documents to the contractor. The contractor shall provide copies of these completed documents to the EPA TOCOR for each batch at least 2 hours prior to the beginning of each regularly scheduled weekly evaluation meetings.

The contractor shall also attend each evaluation meeting and provide for the taking of meeting notes and shall provide a draft copy of the meeting notes to the EPA TOCOR within 5 working days of the conclusion of each evaluation meeting.

Deliverables:

15.1.1 Microsoft Forms surveys for each chemical batch.

15.1.2 Microsoft PowerPoint survey summaries for each chemical batch.

15.1.3 Evaluation meeting notes for each chemical batch.

Sub-task 15.2 Support for the Microbial Contaminants Evaluation Process

Per technical direction from the EPA TOCOR, the contractor shall provide support for the development and conduct an evaluation process for the PCCL microbial contaminants for their consideration of listing on the CCL. This evaluation process for the PCCL microbial contaminants should be as similar to the chemical contaminants' evaluation process as possible. The contractor shall assume that there will be 1 evaluation team for the microbial contaminants. The evaluation team will meet on a bi-weekly basis (with the assumption of <40 PCCL microbial contaminants to evaluate, if there are more than 40 PCCL contaminants to evaluate, meetings may be more frequent), evaluating ~10 chemicals per meeting between March and June 2024.

The contractor shall provide assistance with the development of an evaluation tool for the CCL microbial contaminants (such as Microsoft forms surveys), as well as provide assistance with the analysis of the evaluation results and validation of the results.

Deliverables

15.2.1 Microsoft Forms surveys for each microbial batch.

15.2.2 Microsoft PowerPoint survey summaries for each microbial batch.

15.2.3 Evaluation meeting notes for each microbial batch.

Task 16. Workgroup Meeting Support

The contractor shall attend and assume up to 1 meeting per month for 1-hour per work group meeting related to the CCL 6 process. No more than 10 Work group meetings within option year 1. The contractor shall provide support for the taking of meeting notes and shall provide a copy of the draft summary of the meeting notes to the EPA TOCOR within 3-4 working days of the conclusion of the meeting. Per the EPA TOCOR technical direction, the contractor shall provide the final summary of the meeting notes.

Deliverables:

16.1 Draft summary of meeting notes.

16.2 Final summary of meeting notes.

III. QUALITY ASSURANCE REQUIREMENTS

The tasks in this task order require the use of primary and/or secondary data. Therefore, consistent with the Agency's quality assurance (QA) requirements, the contractor shall develop a project-specific quality assurance project plan (PQAPP), to ensure that data of sound quality is used to complete these tasks. In addition, throughout the course of this task order, if it is determined that the PQAPP requires any revision, the contractor shall provide the necessary changes to the EPA TOCOR.

IV. SCHEDULE OF DELIVERABLES

The contractor shall send EPA all deliverables in accordance with the terms of the contract.

All reports shall be provided first in draft form. Upon receipt of comments from the EPA TOCOR, the contractor shall revise the deliverable and distribute final copies as stated in the Performance Work Statement.

Tasks	Item	Due	Method of Delivery
Task 0. Task Order Administration			
0.1	Initial Conference Call with TOCOR	Within 10 days of the TO award	Conference Call
0.2	PQAPP	Within 2 weeks of the TO award	Electronic
0.3	Monthly Progress Reports	Monthly	Electronic
Task 1 2: Data Analysis and Evaluations			
1.1	Draft(s) of summary spreadsheet(s) of any data/data source submitted with the SAB recommendations and/or public comments.	Per technical direction	Electronic
1.2	Final summary spreadsheet of any data/data source submitted with the SAB recommendations and/or public comments.	Per technical direction	Electronic
1.3	Draft(s) of summaries of changes between the	Per technical direction	Electronic

	Draft CCL 5 Universe, PCCL, and CCL.		
1.4	Final summary of changes between the Draft CCL 5 Universe, PCCL, and CCL.	Per technical direction	Electronic
1.5	Draft written description of CCL 5 impacts of suggested changes.	Per technical direction	Electronic
1.6	Final written description of CCL 5 impacts of suggested changes.	Per technical direction	Electronic
1.7	Draft summary spreadsheet of referenced data sources	Per technical direction	Electronic
1.8	Final summary spreadsheet of referenced data sources	Per technical direction	Electronic
Task 2. Finalize support documents for draft CCL 5 publication			
2.1	Draft(s) of support documents for the final CCL 5.	Per technical direction	Electronic
2.2	Final support documents for the final CCL 5 (508 compliant).	Per technical direction	Electronic
Task 3. Meeting Support for the CCL			
3.1	Draft meeting notes	5 days after the meeting	Electronic
3.2	Final meeting notes	Per technical direction	Electronic
Task 4. Review and Update Data Sources			
Chemicals			
4.1	Draft lists and summaries of new data sources in Excel.	Per technical direction	Electronic
4.2	Final lists and summaries of new data sources in Excel.	Per technical direction	Electronic
4.3	Draft summaries of extracted and analyzed data in a table format.	Per technical direction	Electronic

4.4.	Final summaries of extracted and analyzed data in a table format.	Per technical direction	Electronic
Microbes			
4.5	Draft list and short summaries of new/updated data sources for CCL 6 microbial contaminants	Per technical direction	Electronic
Task 5. Evaluation and Summaries of Nominated			
Chemicals			
5.1	Draft summaries of the relevant data in a table format.	Per technical direction	Electronic
5.2	Final summaries of the relevant data in a table format.	Per technical direction	Electronic
Microbes			
5.3	Summaries of relevant data in a table format.	Per technical direction	Electronic
Task 6: Continue revising and updating the QA/QC reports for the CISs			
6.1	Draft(s) of the CCL Data Management and QA/QC Report	Per technical direction	Electronic
6.2	Final CCL Data Management and QA/QC Report	Per technical direction	Electronic
Task 7: Continue writing the data management and QA/QC scoping document for CCL 6			
7.1	Draft(s) of Data Management and QA/QC scoping document.	Per technical direction	Electronic
7.2	Final Data Management and QA/QC scoping document.	Per technical direction	Electronic
7.3	Draft (s) of CCL 5/6 Scoping and Prioritization Document	Per Technical Direction	Electronic
7.4	Final of CCL 5/6 Scoping and Prioritization Document	Per Technical Direction	Electronic
Task 8. Continue improving and refining existing data files and code			

Sub-task 8.1: Continue improving the CIS data			
8.1.1	Revised and/or corrected data source files.	Per technical direction	Electronic
8.1.2	Iterative draft versions of the CCL 5 Data Improvement report.	Per technical direction	Electronic
8.1.3	Draft(s) of the CCL 5 Data Improvement report.	Per technical direction	Electronic
8.1.4	Final CCL 5 Data Improvement report.	Per technical direction	Electronic
Sub-task 8.2: Continue improving screening files			
8.2.1	Updated and/or revised data files.	Per technical direction	Electronic
8.2.2	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Sub-task 8.3: Continue operating the screening code and conducting analysis of output			
8.3.1	Screening code input and output files.	Per technical direction	Electronic
8.3.2	Screening code output analyses summary documents.	Per technical direction	Electronic
8.3.3	Screening code with documented changes on a code repository site.	Per technical direction	Electronic
8.3.4	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Task 9: Continue operating the screening code and conducting analysis of output			
Update/Revise Screening Process			
Chemicals			
Subtask 9.1 Chemical screening (Continue operating the screening code and conducting analysis of output)			
9.1.1	Screening code input and output files.	Per technical direction	Electronic
9.1.2	Screening code output analyses summary documents.	Per technical direction	Electronic

9.1.3	Screening code with documented changes on a code repository site.	Per technical direction	Electronic
9.1.4	Documents containing the analyses and QA/QC activities.	Per technical direction	Electronic
Microbes			
Sub-task 9.2 Microbial screening			
9.2.1	Identify any “new” microbial contaminants since CCL 5 and add to the microbial universe.	Per technical direction	Electronic
9.2.2	Update the exclusionary screening table with new and existing microbes screening results.	Per technical direction	Electronic
Task 10. Calculate Final Hazard Quotients and Attribute scores			
10.1	Draft values for attribute scores and fHQs.	Per technical direction	Electronic
10.2	Final values for attribute scores and fHQs.	Per technical direction	Electronic
Task 11. Literature Review and CIS			
Chemicals			
Sub-Task 11.1 Chemical Literature Review			
11.1.0	Literature search for Pilot 20-30 chemicals	Per technical direction	Electronic
11.1.1	Draft results of occurrence literature search.	Per technical direction	Electronic
11.1.2	Final results of occurrence literature search.	Per technical direction	Electronic
11.1.3	Table(s) with extracted occurrence literature search data.	Per technical direction	Electronic
Sub-task 11.2 Evaluator Chemical Contaminant Information Sheets			
11.2.0	Draft(s) of the CIS Template in Excel for evaluators	Per technical direction	Electronic

11.2.1	Draft of the data file for the 20-30 pilot set of chemical contaminants		
11.2.2	Draft CIS in Excel of the pilot set of 20-30 chemical contaminants, intended for evaluators and internal review		
11.2.3	Final CIS Template	Per technical direction	Electronic
11.2.4	Draft CIS data files	Per technical direction	Electronic
11.2.5	Final CIS data files	Per technical direction	Electronic
11.2.6	Chemical Contaminant Information Sheets in Excel or PDF files for the evaluators	Per technical direction	Electronic
Microbes			
Sub-Task 11.3 Microbial Contaminant Information Sheets			
11.3.1	Update or develop PCCL 6 microbial CISs based on results of searches for occurrence and health effects and provide references.	Per technical direction	Electronic
Task 12. Support documents for Draft CCL 6 publication			
Chemicals and Microbes			
<i>Sub-Task 12.1 Public facing Technical Support Documents for Draft CCL 6</i>			
12.1.1	Draft(s) of supporting documents for the Draft CCL 6.	Per technical direction	Electronic
12.2	Final supporting documents for the Draft CCL 6 (508 compliant).	Per technical direction	Electronic
12.1.2	Draft(s) of support documents for the Draft CCL 6 microbial contaminants.	Per technical direction	Electronic
Chemicals			
Sub-Task 12.2 Internal Quality assurance/quality control (QA/QC) reports for Draft CCL 6			

12.2.1	Draft(s) of the CCL 6 Data Management and QA/QC Report	Per technical direction	Electronic
12.2.2	Final CCL 6 Data Management and QA/QC Report	Per technical direction	Electronic
Task 13. Support documents for Draft and Final CCL 6 publication			
Chemicals			
13.1	Final Draft(s) of support documents for the Final Draft CCL 6 including CIS (508 compliant).	Per technical direction	Electronic
13.2	Final Draft(s) of support documents for the Final CCL 6. (508 compliant).	Per technical direction	Electronic
Microbes			
13.3	Final support documents for the Draft CCL 6 microbial contaminants (508 compliant).	Per technical direction	Electronic
13.4	Draft(s) of support documents for the Final CCL 6 microbial contaminants.	Per technical direction	Electronic
Task 14: Continue writing a data management and QA/QC scoping document for CCL.			
Chemicals			
14.1	Draft(s) of Data Management and QA/QC scoping document.	Per technical direction	Electronic
14.2	Final Data Management and QA/QC scoping document.	Per technical direction	Electronic
Task 15: Support for the CCL Evaluation Processes			
Subtask 15.1 Support for the Chemical Contaminants Evaluation Process			
15.1.1	Microsoft Forms surveys for each chemical batch.	Per technical direction	Electronic
15.1.2	Microsoft PowerPoint survey summaries for each chemical batch.	Per technical direction	Electronic

15.1.3	Evaluation meeting notes for each chemical batch.	Per technical direction	Electronic
Subtask 15.2 Support for the Microbial Contaminants Evaluation Process			
15.2.1	Microsoft Forms surveys for each microbial batch.	Per technical direction	Electronic
15.2.2	Microsoft PowerPoint survey summaries for each microbial batch.	Per technical direction	Electronic
15.2.3	Evaluation meeting notes for each microbial batch.	Per technical direction	Electronic
Task 16: Workgroup Meeting Support			
16.1	Draft summary Meeting Notes	3 days after Meeting	Electronic
16.2	Final summary Meeting Notes	Per Technical Direction	Electronic

V. PERFORMANCE STANDARDS AND MEASURES

The following standards will be used to measure performance.

1. Quality of Products: All tasks are to be of superior quality. The quality of outputs will be measured against similar analyses and work already performed by EPA.
2. Schedule: All tasks are to be completed on, or ahead of schedule as measured against the acceptance criteria.
3. Ingenuity and Resourcefulness: New issues are addressed using innovative analyses. Ingenuity and resourcefulness will be measured by the ability to use innovative analyses to address new issues not previously identified.
4. Quality assurance: Adhere to both Contract level QAPP and PQAPP.

VI. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the agency's official representative. The contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the CO, CL-COR and/or TOCOR.

VII. STATUS NOTIFICATION

v3.21

The contractor shall notify the EPA PO and program office contact when 75% of the funds provided have been expended or when funding for less than 6 weeks work remains. The contractor shall also notify the TOCOR when 75% of the funds have been used on any single case assignment. Notifications shall be in writing and cc'd to the Project Officer.

SECTION B - Supplies or Services/Prices

B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION

(a) Severable services may be incrementally funded. Non-severable services shall not be incrementally funded. Contract line item 0004 is severable and may be incrementally funded. For this item, the sum of **\$27,000.00** of the total price is presently available for payment and allotted to this item.

(b) For items identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those items for the Government's convenience, approximates the total amount currently allotted for those items to the contract. The Contractor shall not continue work on those items beyond that point. Subject to the clause entitled "Termination for Convenience of the Government," the Government will not be obligated, under any circumstances, to reimburse the Contractor in excess of the amount payable by the Government in the event of the termination of applicable contract line items for convenience including costs, profit, and estimated termination costs for those line items.

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (h) of this clause, the Contractor will notify the Contracting Officer, in writing, at least 10 days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount currently allotted to the contract for performance of the applicable items. The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the applicable line items up to the next scheduled date for the allotment of funds identified in paragraph (a) of this clause, or to a substitute date as determined by the Government pursuant to paragraph (d) of this clause. If, after such notification, additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause entitled "Termination for Convenience of the Government."

(d) The parties contemplate that, subject to the availability of appropriations, the Government may allot additional funds for continued performance of the contract line items identified in paragraph (a) of this clause and will determine the estimated period of contract performance which will be covered by the funds. If additional funds are allotted, the Contracting Officer will notify the Contractor in writing. The Contractor shall not resume performance of the contract line items identified in paragraph (a) until the written notice is received. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and to the new estimated period of contract performance. The contract will be modified accordingly.

(e) The Government may, at any time prior to termination, allot additional funds for the performance of the contract line items identified in paragraph (a) of this clause.

(f) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default". The provisions of this clause are limited to the work and allotment of funds for the contract line items set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded.

(g) Nothing in this clause affects the right of the Government to otherwise terminate this contract pursuant to the contract clause entitled "Termination for Convenience of the Government".

(h) The parties contemplate that the Government may obligate funds to this contract in accordance with the following schedule:

RECAPITULATION OF FUNDING TO DATE – LINE ITEM 0004
CONTRACT NO. 68HERC21D0006
TASK ORDER NO. 68HERC22F0099

Period of Performance - FROM 03/01/2023 through 02/29/2024

Line Item 0004 Amount	\$124,698.00
Funding Action	
Incremental Funding (P00003)	\$27,000.00
Unfunded amount	\$97,968.00

SECTION F - Deliveries or Performance

F-1 Local Clauses EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this Task Order period (Base Period) shall be from 03/01/2022 through 02/28/2023, inclusive of all required reports.

Option Period 1 shall have a period of performance from 03/01/2023 through 02/29/2024, inclusive of all required reports.

Option Period 2, if exercised, shall have a period of performance from 03/01/2024 through 02/28/2025, inclusive of all required reports.

SECTION G - Contract Administration Data

G-1 Local Clauses EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Thomas Lombardi, 202-564-7653, lombardi.thomas@epa.gov (Alternate TOCOR)

Kesha Forrest, 202-564-3632, forrest.kesha@epa.gov (Alternate TOCOR)

Nicole Tucker 202-564-1946, tucker.nicole@epa.gov (TOCOR)

Contracting Officials responsible for administering this contract are as follows:

Keith Pfeffer, 513-487-2034, pfeffer.keith@epa.gov (Contracting Officer)

John Krauss, 513-487-2148, krauss.john@epa.gov (Contract Specialist)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES			
					12			
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)		
P00005		See Block 16C		RFM-CAD-23-00093				
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE		
CAD								
US Environmental Protection Agency								
26 West Martin Luther King Drive								
Mail Code: W136								
Cincinnati OH 45268-0001								
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(x)			9A. AMENDMENT OF SOLICITATION NO.	
Cadmus Group LLC, The								
Attn: JOEL DEMASI								
100 5TH AVENUE							9B. DATED (SEE ITEM 11)	
SUITE 100								
WALTHAM MA 024518727				x			10A. MODIFICATION OF CONTRACT/ORDER NO.	
							68HERC21D0006	
							68HERC22F0099	
							10B. DATED (SEE ITEM 13)	
							02/08/2022	
CODE		WSEZME8NNBA8		FACILITY CODE				
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS								
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.								
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.								
12. ACCOUNTING AND APPROPRIATION DATA (If required)								
See Schedule								
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.								
CHECK ONE		A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.						
		B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).						
		C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:						
X		D. OTHER (Specify type of modification and authority)						
		B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION						
E. IMPORTANT: Contractor <input type="checkbox"/> is not <input checked="" type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.								
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)								
UEI: WSEZME8NNBA8								
TOCOR: Nicole Tucker Max Expire Date: 02/28/2025 InvoiceApprover: Nicole Tucker Alt Invoice								
App: Kesha Forrest								
The purpose of this Modification is to shift funds in the total Time-and-Materials amount of \$97,698.00 FROM Item 0001 (Base Period) TO Item 0004 (Option Period 1). As a result, \$97,698.00 is de-obligated from Item 0001, and \$97,609.00 is obligated to Item 0004, resulting in a net \$0.00 overall change to the Task Order.								
LIST OF CHANGES:								
Total Amount for this Modification: \$0.00								
Continued ...								
Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.								
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)				
				John Krauss				
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED		
(Signature of person authorized to sign)						04/28/2023		
				ELECTRONIC SIGNATURE				
				(Signature of Contracting Officer)				

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED 68HERC21D0006/68HERC22F0099/P00005	PAGE	OF
		2	2

NAME OF OFFEROR OR CONTRACTOR
Cadmus Group LLC, The

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Obligated Amount for this Modification: -\$97,698.00</p> <p>Incremental Funded Amount changed from \$187,977.00 to \$90,279.00</p> <p>CHANGES FOR ACCOUNTING CODE: 22-23-B-40DA-000B53-2505-2240SRE002-001 Amount changed from \$168,009.00 to \$70,311.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 4</p> <p>Obligated Amount for this Modification: \$97,698.00</p> <p>Incremental Funded Amount changed from \$27,000.00 to \$124,698.00</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code: 22-23-B-40DA-000B53-2505-2240SRE002-001</p> <p>Beginning FiscalYear 22</p> <p>Ending Fiscal Year 23</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 40DA</p> <p>Program (PRC) 000B53</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 2240SRE002-001</p> <p>Quantity: 0</p> <p>Amount: \$97,698.00</p> <p>Payment:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>Period of Performance: 03/01/2022 to 02/28/2025</p>				

SECTION B - Supplies or Services/Prices

B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION

(a) Severable services may be incrementally funded. Non-severable services shall not be incrementally funded. Contract line item 0004 is severable and may be incrementally funded. For this item, the sum of **\$124,698.00** of the total price is presently available for payment and allotted to this item.

(b) For items identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those items for the Government's convenience, approximates the total amount currently allotted for those items to the contract. The Contractor shall not continue work on those items beyond that point. Subject to the clause entitled "Termination for Convenience of the Government," the Government will not be obligated, under any circumstances, to reimburse the Contractor in excess of the amount payable by the Government in the event of the termination of applicable contract line items for convenience including costs, profit, and estimated termination costs for those line items.

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (h) of this clause, the Contractor will notify the Contracting Officer, in writing, at least 10 days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount currently allotted to the contract for performance of the applicable items. The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the applicable line items up to the next scheduled date for the allotment of funds identified in paragraph (a) of this clause, or to a substitute date as determined by the Government pursuant to paragraph (d) of this clause. If, after such notification, additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause entitled "Termination for Convenience of the Government."

(d) The parties contemplate that, subject to the availability of appropriations, the Government may allot additional funds for continued performance of the contract line items identified in paragraph (a) of this clause and will determine the estimated period of contract performance which will be covered by the funds. If additional funds are allotted, the Contracting Officer will notify the Contractor in writing. The Contractor shall not resume performance of the contract line items identified in paragraph (a) until the written notice is received. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and to the new estimated period of contract performance. The contract will be modified accordingly.

(e) The Government may, at any time prior to termination, allot additional funds for the performance of the contract line items identified in paragraph (a) of this clause.

(f) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default". The provisions of this clause are limited to the work and allotment of funds for the contract line items set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded.

(g) Nothing in this clause affects the right of the Government to otherwise terminate this contract pursuant to the contract clause entitled "Termination for Convenience of the Government".

(h) The parties contemplate that the Government may obligate funds to this contract in accordance with the following schedule:

RECAPITULATION OF FUNDING TO DATE – LINE ITEM 0004
CONTRACT NO. 68HERC21D0006
TASK ORDER NO. 68HERC22F0099

Period of Performance - FROM 03/01/2023 through 02/29/2024

Line Item 0004 Amount	\$124,698.00
Funding Action	
Incremental Funding (P00003)	\$27,000.00
Incremental Funding (P00005)	\$97,698.00
Unfunded amount	\$0

SECTION F - Deliveries or Performance

F-1 Local Clauses EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this Task Order period (Base Period) shall be from 03/01/2022 through 02/28/2023, inclusive of all required reports.

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Option Period 2, if exercised, shall have a period of performance from 03/01/2024 through 02/28/2025, inclusive of all required reports.

SECTION G - Contract Administration Data

G-1 Local Clauses EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

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Nicole Tucker 202-564-1946, tucker.nicole@epa.gov (TOCOR)

Contracting Officials responsible for administering this contract are as follows:

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